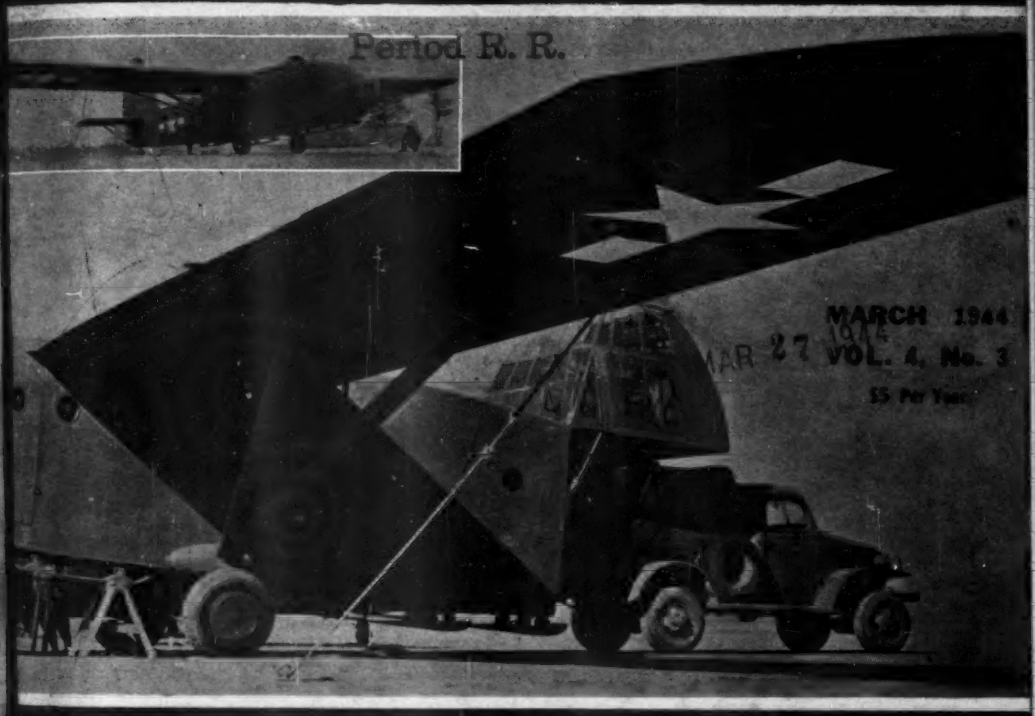
AIR TRANSPORTATION

TRADE MARK



Period R. R.

MARCH 1944
VOL. 4, No. 3
$5 Per Year

MAR 27 1944

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SOUTH AMERICA*

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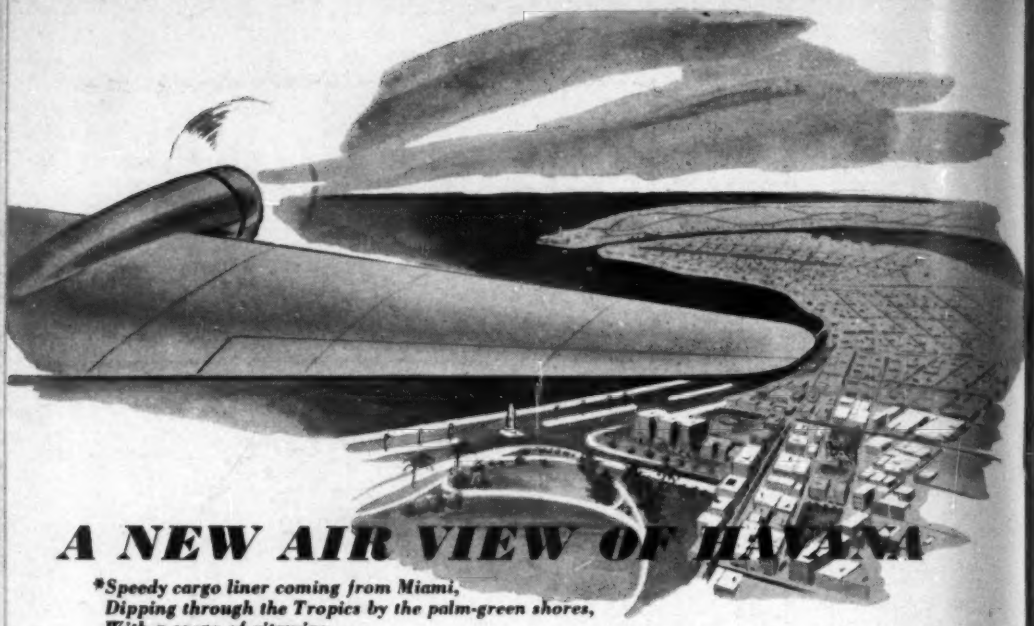

A NEW AIR VIEW OF HAVANA

**Speedy cargo liner coming from Miami,*
Dipping through the Tropics by the palm-green shores,
With a cargo of vitamins,
X-Ray tubes, hosiery,
Magazines, news reels, and plain camp stores.

Back from Havana, Expreso Aereo Inter-Americano's exclusively cargo-carrying planes fly cigars, tobacco, fruits, vegetables, liquors, sponges – the wealth of Cuba . . . Cuba, the pearl of the Antilles.

THE 49th STATE

To the air-minded, Cuba is viewed as a part of the Union—our nearest off-shore neighbor. Through Havana flows the bulk of Cuba's extensive export and import trade—$200,000,000 worth in peacetime, far more today.

Expreso Aereo Inter-Americano, S. A., the independently owned Cuban airline, has fashioned a new link between Miami and Havana with daily flights across the Florida Straits—two hours each way.

Exporting and importing simplified—No wait for ships—No Consular Invoices—No Red Tape—No Priorities.

TWENTY CENTS PER POUND

The *overall* cost of express-air service to or from Havana is economical compared with any other route. Rates between Miami and Havana are 20¢ per pound (or 200 cubic inches), minimum charge $1.10 per shipment.

For example, $11.43 is the total charge on 40 pounds of drugs (value $250) from Chicago to Havana via Acme Overseas Express and Expreso Aereo Inter-Americano.

CONNECTIONS

Acme Overseas Express, representing the airline in the United States, provides direct rail express service to Miami from 58 Receiving Stations, and issues Joint Through Airwaybills.

The Acme Overseas Express Through Airwaybill is your "bill of lading" all the way to Havana. Complete transportation charges are on the one document (Straight or Order Notify).

Any means of transportation may be used to reach Miami for plane connection. Always consign southbound shipments to Acme Overseas Express, 400 S.W. First Avenue, Miami. Northbound shipments will be forwarded from Miami direct to consignee via Railway Express or any other medium designated.

THE PRACTICAL VIEW

Ship *today* the air-cargo way. No need to await postwar developments. Expreso Aereo planes are ready *now* to speed your shipments, large and small, heavy or light.

* With due respect to John Masefield for his poem "Cargoes."

Write for descriptive booklet

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ACME OVERSEAS EXPRESS

Division of ACME FAST FREIGHT, INC.

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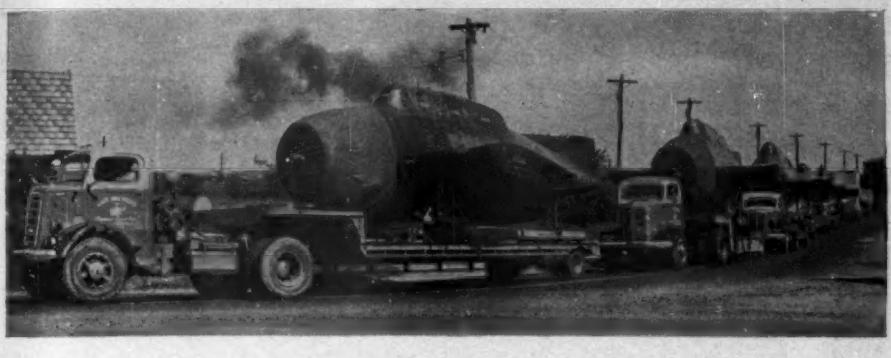
ADDRESS ALL INQUIRIES TO ACME OVERSEAS EXPRESS

RIGHT NOW WE'RE BUSY WORKING FOR VICTORY



We're boxing and processing war planes, trucks, tanks and guns for Uncle Sam. We're transporting them from the roaring production lines to the airports and piers, whence huge transport planes and ships of the United Nations speed them to the global war fronts; to swift deadly action against the Axis. This is our part in the war, our contribution toward Victory.

★

When Peace comes, we shall square our shoulders and carry on, giving to business and industry the benefit of our vast experience, our technical knowledge and our practical skill, in processing and transporting the implements of Peace, the tools of reconstruction. This will be our post-war part in building a brave, new world in a brave, new era.

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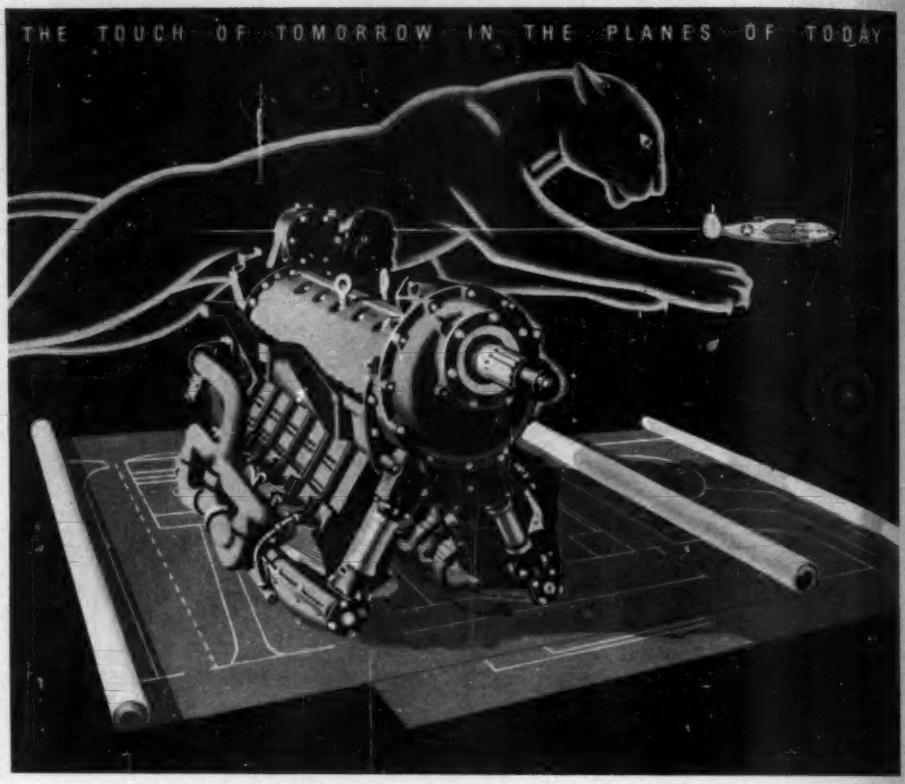
DADE BROTHERS, Inc.

MAIN OFFICE: MINEOLA, N. Y.

BRANCHES THROUGHOUT THE UNITED STATES



Purr of a Kitten — Power of a Panther

The panther is unique in many ways. It packs more lightning power in its small, lithe frame than many animals of greater size. Much the same can be said of the 550 horsepower Ranger aircraft engine.

The Ranger is the *only* in-line, inverted, air-cooled engine in production in America. Its sleek lines and narrow nose permit it to slip through the air with a minimum of drag, and in addition, give the pilot greater visibility.

It is "lighter and quicker on its feet" than other engines in its power class . . . delivers more power for its weight.

And then, it stands alone in still another respect: it is the one truly high-speed engine in its power class. The explosions that give life to its parts recur with such lightning rapidity that they blend into a velvety purr.

Three hundred explosions a second! They sound like this ~~~~~~~~~~ In other engines in the same power class they sound like this ^^^^^^^^ Get the idea? *Velvet* power vs. jolting power.

Fairchild engineers seek still better performance through better materials, methods and designs for still better Ranger engines. It is these men who keep the Fairchild "touch of tomorrow in the planes of today."

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Vol. 4
No. 3

AIR TRANSPORTATION

50 CENTS A COPY $5.00 A YEAR

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1944

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WHAT THE TRAINING COMMAND HAS PRODUCED

(To December 1, 1943)

Air crew	1939	1940	1941	1942	1943	Total
Pilots	696	1,786	7,244	28,782	56,008	94,516
Navigators		44	601	4,477	13,783	18,905
Bombardiers		18	310	5,760	13,998	20,086
Aerial gunners				25,820	106,981	132,801
Miscellaneous			198	2,325	18,850	21,373
Technicians				273,068	513,333	786,401
TOTAL	696	1,848	8,353	340,232	722,953	1,074,082

BEECHCRAFT BOMBER CREW TRAINERS

Leading formation, Beechcraft AT-10 advanced *pilot* trainer. Second, Beechcraft AT-7 (Navy SNB-2) *navigation* trainer. Third, Beechcraft AT-11 (Navy SNB-1) *bombing* trainer. The thousands of these Beechcrafts in use by the Armed Forces have played a dominant part in the training of bomber pilots, bombardiers, and navigators and have earned their excellent reputation by faithful and efficient performance.

A magnificent accomplishment is summarized in the figures quoted above. In only two years, the Training Command of the U. S. Army Air Forces has schooled virtually the entire personnel of the world's greatest air army. Its graduates are beyond doubt the best trained airmen in all military history. The results of their training are apparent in every news dispatch that tells of bombing missions successfully completed, and of aerial combat scores predominantly favoring our air arms. Here is the sure forecast of our Victory . . . for Victory today must be won in the skies.

Beech Aircraft

CORPORATION

BEECHCRAFTS ARE DOING THEIR PART WICHITA, KANSAS, U. S. A.

Clouded Postwar Air May Soon Be Clearing As Five Nations Meet

Nation-vs.-Nation Disagreements Move Toward Settlement, As Ship Leaders Gird for Battle for Place in Air

WASHINGTON buzzed this month with reports and rumors and counter-rumors about air transportation's postwar future. The net of all the talk both behind the scenes and in the open boiled down to these probabilities:

1. Sometime during this spring, a five-power conference will lay the first internation groundwork on the long argued question of who controls what in the postwar air. Scheduled participants, beside the U. S.: Britain, Russia, Canada, China.

2. The Merchant Marine Committee of the House of Representatives will soon bring out from under wraps a bill which would have the effect, if passed, of taking down the bars which the Civil Aeronautics Board has erected against the active entrance of ship lines into the postwar airline business. Such a bill might well at least partially open the way for railroads, too, to climb into the air. Both are eventualities that present airline heads will fight tooth and nail.

For present and potential shippers-by-air, both developments might well be good news.

The proposed five-power parley at least would clear the air of some of the vast confusion which has left users of air transportation totally in the dark as to what to expect when the war is over. Now, at last, the U. S., with its tradition of relatively free competition under Government regulation, will come face-to-face with the firm British policy of putting all its foreign airline eggs into the one basket of a "chosen instrument" corporation, at present British Overseas Airways Corp.

The Washington talk early this month was that, if the first conference worked out, a later and bigger parley would be held at which all of the United Nations with an important stake in air transportation would meet.

Joseph C. Grew, former Ambassador to Japan and now special assistant to the Secretary of State, is slated to head the U. S. delegation. By way of preparation, he's said to have been spending most of his time studying air problems.

Position of Britain, Russia and China as the other three of the Allied Big Four seems a clear enough reason for them to be at the original meeting. As for Canada, its being invited is but new evidence of the long forecast vital importance of the Dominion as the air crossroads of the world, due to its strategic location if to nothing else. Canada, like Great Britain, leans rather heavily toward "chosen-instrument" operations, even in the domestic field. Although the Government-owned Trans-Canada Air Lines shares Canadian air transportation with other companies, it has the situation largely under control, as the only operator of a through transcontinental line in the Dominion. Canadian Pacific Air Lines, the major competitor, would like nothing better than a chance to

establish its own transcontinental line, paralleling its parent railroad (just as Trans-Canada Air Lines parallels its parent, the Canadian National Railways), it has had no shining success in that direction so far.

Other Powers To Come Later

Once the Big Five have got anywhere, it's believed, there'll be time enough for all the other countries who'd like to have a share in orderly international air transportation development. Eventual conferees are almost certain to include:

The Netherlands, which though occupied in the homeland, remains very much of a going concern in the air through the West Indies operations of KLM-Royal Dutch Airlines.

Sweden, which has plans rather well advanced for a postwar transatlantic line, as reported in AIR TRANSPORTATION last August.

Switzerland, which has just as ambitious plans, recorded in these pages in December, 1943, by Henry Pillichody, of the Swiss National Office of Transportation, in an article hailed editorially this month by no less an observer than the New York *Times.*

Belgium, which like the Dutch has kept some part of its air transportation alive, in Africa.

In addition, of the major powers operating in the air before the war, *France* undoubtedly will be a factor in postwar planning. So may some South American countries.

The two remaining nations that were prominent in air transportation before 1939 won't be asked: Germany and Italy.

What About Enemy Airlines?

Meanwhile, the British were reported to be favoring a plan for the taking over of all enemy-owned airlines. In view, said one report, was some kind of international authority set up by cooperating governments for the purpose of running present German and Jap lines.

Another reported British proposal was in the direction of creating a vastly more strict system for international regulation of all air commerce, whether privately or governmentally operated, than has ever been tried in the case of maritime commerce. Such a body might even have power to issue licenses to those engaged in international air commerce.

The American proposals, it was rather generally conceded, wouldn't go so far.

Maritime Commission Would Enter

On the ship-vs.-airline front in the U. S., while there was no definite news on the form the proposed Merchant Marine Committee bill would take, it was reported that it probably would give the Maritime Commission a high measure of authority in determining whether or not a shipping line should be considered a logical candidate for an airline franchise.

Reports said that this didn't mean the Civil Aeronautics Board would be robbed of its present authority to accept or reject applications for inauguration of airline service. But CAB's powers would, it appears, be limited in certain respects and the chances of the ship people's getting into the air, at least on a limited basis, would be brighter than at any time since American Export Lines was instructed to divorce its offspring, the already healthy and operating American Export Airlines.

Labor, Too, Has Its Say

On still another facet of the complex question, labor, in the person of the Railway Labor Executives Assn., stuck in an oar this month.

The association, at a Washington meeting this month, insisted that:

1. Domestic airlines be kept in the domestic field and not allowed to operate internationally.

2. Foreign airlines be kept out of the country except for rights at ports on the coasts and borders.

3. U. S.-owned international airlines likewise be kept out of the domestic field and forced to stop at the borders.

As an additional point, RLEA declared in favor of what it called an "American-flag airline" in the international field—another way of saying "chosen instrument" and of joining Pan American Airways' Juan Terry Trippe and United Air Lines' W. A. Patterson in their so far lone stand (among U. S. airline heads) against free and open competition among U. S. companies in the international field.

Britain Looks Ahead

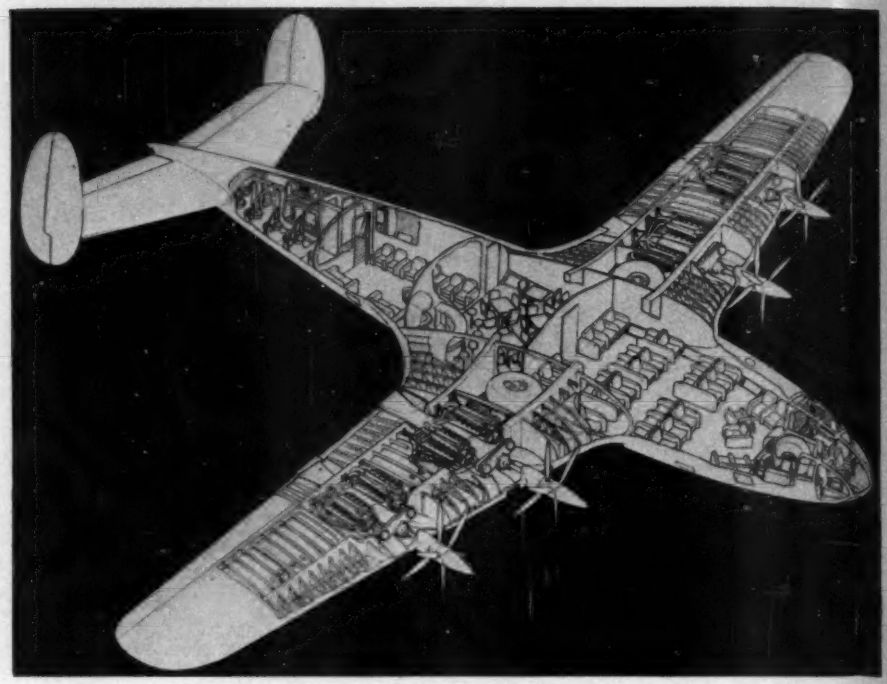
Noted British Designer Discloses First Details and Cost Estimates For Postwar Transocean Airliners

By FREDERICK GEORGE MILES, F.R.AE.S., M.S.A.E.
Managing Director, Miles Aircraft Ltd., London

THE arguments concerning the place of aircraft in the field of transportation are so well known and shop-soiled as not to merit reiteration. I therefore propose to state my belief that *air travel is potentially capable of carrying 90 per cent of the world's long distance passenger traffic* on an economic basis.

If it were not, either open or concealed military subsidies would press the development and expansion of aircraft airlines and air bases as long as wars are possible, and until the normal progress of knowledge made low prices possible. It is not logical to argue whether or not commercial aircraft should "fly by themselves" when they have such vital military significance.

Having given this as part of the reason for my belief that development will be



Designer's sketch shows spacious passenger appointments of the famed Miles "X", planned to cruise the transatlantic airlanes at the super-speed of 350 miles an hour.

more rapid than purely commercial interest would appear to justify, I turn to the "*X*" as a transport aircraft.

The Miles "*X*" was conceived, in general plan, as long ago as 1935. The principle aimed at was a practical combination of all those features which reduced drag, increased the economic speed and made for the minimum structural weight with the maximum of internal space and comfort. Since 1935 we have worked steadily on the design, often changing detail but retaining the characteristic arrangement, and never forgetting our aim to provide a really practical commercial aircraft for the cream of the high speed traffic.

So far the design has proved most adaptable. No major changes in engines or aerodynamics has occurred other than those we anticipated in the early stages. Even jet engines and boundary layer suction were thoroughly considered and could be installed as a last-minute decision.

In estimating the optimum speed in terms of cost and efficiency, it may be considered that the economic cruising speed at which we have aimed—*350 miles per hour as against the average of about 250 miles per hour chosen by competitors*—is too high from a commercial point of view. In my opinion this perennial argument is founded upon insufficient basic data being available in the comparative calculations. There are many unknowns and incalculables which cannot be included in the usual cost parameters.

Top Speed Expected

Some are in the nature of a gamble; for instance, if the jet, either as the sole means of propulsion or as an auxiliary to airscrews, should develop during the life of the aircraft, the faster type will advantage the more. In any case, by the reduction in drag and weight due to the particular features of the "*X*," we hope that, power for power, it will prove to be many miles per hour above most of its rivals.

The special construction employed results in an airframe of greatly reduced

skin area and head resistance, because the fuselage and wing shape permits the more efficient stowage of payload, whether passengers or freight. Then there is the absence of "built-in headwinds" in the form of external engine nacelles and other equipment.

Per-Mile Cost Lowered

The perfect shape of the nose, which gives view without projecting wind-screens; the horizontal oval of the fuselage and the flow of the wing root into the fuselage (which is the result of much experiment) all aid in increasing the speed and reducing the cost per passenger-mile. The wing plane and thickness which meet the fuselage so conveniently also allow the spar depths and shapes to follow the bending moment curve in such a way as to make a very light and stiff structure, releasing some hundreds of pounds of weight for paying load.

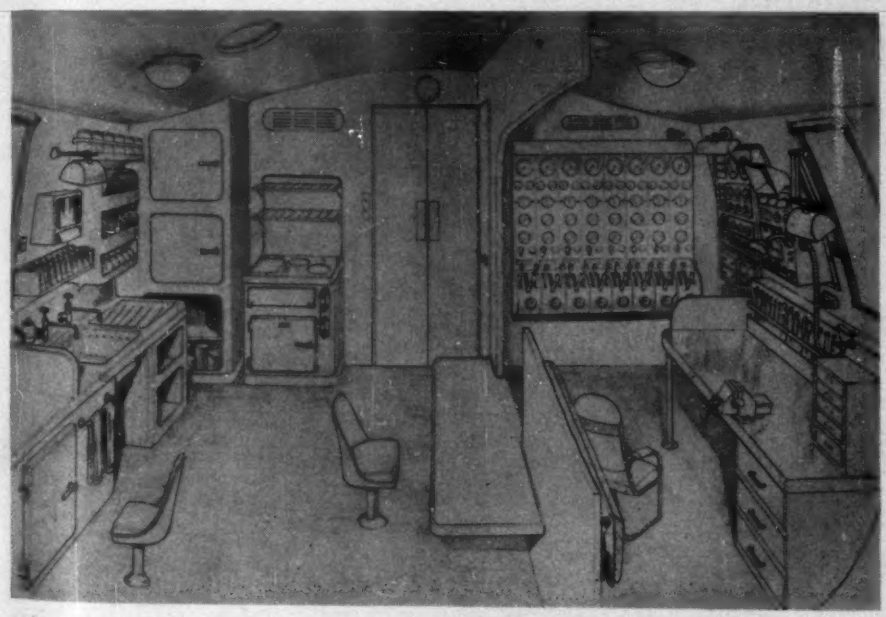
The "*X 11*," meant for transatlantic routes, is not large compared with other projected aircraft, although it is more than double the weight of those in common use today. Nevertheless, its passenger accommodation is roughly equivalent to types dimensionally much bigger.

Load for load the advantage of size-saving gives advantages of adaptability, of comparative ease of replacement and of economy.

We have aimed at the optimum size for a date around 1950; for a later time doubtless it would be wise to consider a larger capacity. The extrapolation of prewar travel curves is *an unreliable guide to the number of passengers likely to travel in the Air Age, when fares will be lower, journeys more comfortable and so much more swift that no place in the world will be three days away from any other place.**

The "*X*" is of a convenient size and speed for journeys of from 500 to 3000 miles. During the early years of travel by air this adaptability should be useful. It may take anything from 10 to 20 years for the taste and need for travel to grow beyond our present imagination.

By 1842 the railways in England covered only the shadow of a shadow of their present network; yet even their most enthusiastic supporters could not visualize



These are simply service portions of the great "X", as pictured by Miles. At left, the galley. At right, the engineering section, whence the chief engineer would supervise his part of the crew.

the mightly expansion demanded of them. They have grown beyond men's belief since 1825. When a man could travel from London in England to Glasgow in Scotland in 24 hours by rail and steam the *Railway Times* asked: "What more can any reasonable man want?"

I have no room for graphs of travel by rail or sea, but *no prophet or mathematician could have forecast the rise of traffic following the discovery and development of steam engines and steamships.* The curves followed no foreseeable law; they burst the apparent limits of expansion year by year and decade by decade. We face a similar revolution by air transport.

Overall cost is so basically affected by day-to-day changes in running costs and overheads, which are in their turn determined by the drag of the aircraft, the power and consumption of power units, the reliability and maintenance requirements of the aircraft and especially by the burden of traffic on a given route, that figures are no more than a vague and, if conservative, probably pessimistic estimate of possibilities.

Taking the *"X 14"* as an example (because the *"X 11"* is intended more for prestige lines, such as the direct cross-Atlantic route), these are our present estimates of costs in Britain, based on the most accurate data available:

Assuming a route of 2,500 miles with 14 services weekly (728 services per year with a fleet of eight aircraft) this means 273 days per year for each machine and three months for overhaul. Assuming a constant headwind of 10 miles per hour—experience has shown this to be conservative—and allowing for each aircraft to complete 91 services, *i.e.* 455,000 miles, and with a cruising speed in still air of 265 m.p.h. this gives 1,780 flying hours.

Then

5% interest on the capital cost of 8 aircraft at £1.10.0, per lb. all-up weight	72,000
Obsolescence on aircraft over 5 years at 20%	288,000
Obsolescence at 40% on spares to value at 20% of aircraft	115,000
Maintenance:	
Labour at £12. per flying hour	171,000
Materials at £17. per flying hour	242,000
Engineering on cost	120,000
Crews at £12. per flying hour	171,000
Fuel and oil at £38.5.0. per flying hour	548,000
	£1,727,000

Add

Airport fees, administration costs, advertising, etc., say	300,000
	£2,027,000

Therefore for 3,640,000 miles at £145.5.0. per hour the operating costs per mile would be 11.4 *shillings.*

Each machine has accommodation for 64 passengers, and assuming a passenger load factor of 45 passengers, a total mail load of 2,000,000 lbs. per year and the remainder of payload available at 2/6d per lb., we get an annual payload of 24,752,000 lbs. made up as follows:

	Lbs.
65,000 *passengers at* 256 *lbs.*	17,350,000
Mail	2,000,000
Freight	5,402,000
	24,752,000

And to meet the operating costs of £2,027 we may assume:

65,500 *passengers at* £13.8.0.	877,000
2,000,000 *lb. mail at* 5/-	500,000
3,402,000 *lb. at* 2/6d	650,000
	£2,027,000

Assuming 100 per cent loads the passenger-mile cost would fall to 2.08 pence per mile—or 13.3 pence per ton-mile.

These figures are supplied merely as being of interest, although they are believed to apply reasonably closely to a known case.

However, space does not permit full discussion, and this must therefore be left for the future. It suffices to say, perhaps, that the rise in engine power to provide the increased speed does not materially raise costs *provided* a large percentage of payload is always carried. Also the engines which cannot be enclosed at the *"X 14"* size, can be completely submerged in the *"X 11"* and this one factor offsets much of the increased cost of running.

My opinion is that air travel has a long development ahead in spite of already rapid progress, and we intend to keep the *"X"* up-to-date.

A Bomber is
only as good as its Crew

"German cities blasted . . . planes return safely!"
Next time you see a headline like that, remember that back of the smooth proficiency of a bomber's crew are many months of difficult training!

Canadian Pacific Air Lines is proud to shoulder the task of training navigators, pilots, observers and bombardiers for the air forces of Canada, Great Britain, Australia and New Zealand.

The company operates, on a non-profit basis, six Air Observer Schools and is the largest civilian establishment co-operating with the British Commonwealth Air Training Plan.

Canadian Pacific
AIR LINES

THE WINGS OF THE WORLD'S GREATEST TRAVEL SYSTEM

Air Express: Now and Tomorrow

REA's Head Issues New Statement on His Views of Rosy Cargo Predictions

By L. O. HEAD
President, Railway Express Agency

DURING the past 18 months, as the nation geared its vast resources to the relentless engines of war production, and the importance of transportation by air became increasingly evident, both dreamers and realists alike have carried on spirited discussions in the daily press, on the air and through the columns of aviation periodicals. Taking as their keynote the magnificent job being done by the armed services in speeding essential materials to world-wide battlefronts, many of these seers have soared to limitless ceilings to predict the future of air cargo transportation for their fellowman.

The Author

L. O. Head, president of Railway Express Agency, Inc., is now in his twelfth year as chief executive of his company. He began his express experience in Texas 45 years ago and rose through various positions of responsibility to assistant to the vice president and general manager at San Francisco.

Mr. Head was appointed to that post himself in January, 1927; continued as vice president of the Western department two years later for Railway Express Agency, when it succeeded the predecessor company in March, 1929. He was called to Chicago three years later to become vice president of operations in the central department. In September, 1932, he was elected president of the Express Agency.

Unfortunately, the articles and statements of far too many of these post-war prophets would seem to have emanated from uninformed theorists rather than from practical far-visioned men of varied transportation experience. Consequently, many of our customers, who intentionally or otherwise, have been misled, have naturally sought our views. We who have a genuine and friendly interest in the development of air transportation believe that much of this inexpert discussion may retard rather than help such development.

The war has produced many technological developments in the aircraft industry; larger and faster planes are carrying great loads great distances—but not in common carrier operation. Airplane manufacturers envision great ships of the air and say that these will bring substantial reductions in operating costs, but all of this must be largely conjecture until the war ends.

What operating costs will prevail in the post-war period cannot be determined now with any degree of accuracy. It is likewise impossible at the present to identify the types of traffic that can move at rates higher than those for surface transportation.

Railway Express is the one organization which for years has been and is now conducting the Air Express business on all of the nation's airlines. We have also materially aided in the development of International Air Express service. We have an Air Express Division officered by men of wide transportation experience, who for more than 16 years have been engaged in the development, handling and publicizing of Air Express. This experience makes their opinions especially valuable. In these conclusions, I have drawn upon this experience and the extensive research we have carried on during all of that time and from that I believe we can determine the reasonable possibilities of the immediate post-war future.

As early as 1919, the express organization became interested in the possibilities of commercial air transport and experimented with it. But it was not until 1927, when regularly scheduled air service across the nation was inaugurated, that air express service could be established. On September 1 of that year, our Air Express Division was formed and has been continuously operated since that time.

From the beginning, with only a few airport cities, Air Express was made available to all of our customers throughout the country. Thus a shipment could be forwarded under a single express receipt between any two points in the U. S., providing a fully coordinated and integrated air and rail service, as required. As the air industry expanded, due in part to the growth of airport facilities, increase in number of operating air companies and service to wider areas, this single responsibility in the handling of Air Express became of increasing importance to the commercial and industrial life of the nation.

Public acceptance of this excellent service, with overnight shipping facilities coast to coast, is evidenced in the following statistics of number of shipments, tonnage and gross revenue:

Amid all the hundreds of thousands of words that have been written and spoken about Cargo by Air, the one organization which has been conducting an Air Cargo business in the U. S. in a big way has, with rare exceptions, kept mum.

Hence, when Railway Express Agency says something, whether that something is much or little, about Air Cargo, it's likely to be news. That's why the Editors rushed to the printer to make over this month's issue in order to include this article by REA's President Head.

Many of *Air Transportation's* more forward-looking readers may consider the official REA attitude here outlined an arch-conservative one. Few of Air Cargo's more enthusiastic prophets will agree with all of it.

But all who have any stake in the future of shipping-by-air should be familiar with it. And none can deny that REA's experience as an actual operator in the business, in the domestic U. S. field, qualifies it for a most respectful hearing. Naturally, the Editors will be glad to hear from any and all readers with questions, dissents or plaudits.

	No. Shipments	*Weight Lbs.*	*Gross Revenue*
1928	17,006	.....	$130,773
1933	68,683	404,640	217,966
1938	715,410	4,726,567	1,919,874
1939	870,806	5,850,569	2,385,142
1940	1,078,189	7,699,772	3,043,231
1941	1,306,629	11,240,204	4,277,069
1942	1,405,320	21,704,323	9,036,380
*1943	1,559,495	31,066,414	11,011,321

*Partly estimated.

Our interest in the future development of Air Express was plainly indicated in the extensive customer survey we made before the war. More than 93,000 of our customers were personally interviewed in order that we might learn the extent to which we should expand our Air Express service to meet their transportation requirements. Our inquiry also undertook to develop the level of rates that would permit them to move their various commodities in Air Express service. We have been serving most of these customers for generations; they have confidence in our service and in our resourcefulness in meet-

ing their future transportation needs.

We find that many of these long-time customers are now in war production, but in their post-war planning they contemplate enlarging their output and variety of products. But they insist that mass production, under our national economy, is the basis for the lowest possible selling price to the consumer. They point out that this requires a holding or warehousing period in the process of distribution and marketing chiefly so that transportation costs may be held to the minimum. In their opinion, these uncertainties as to the future costs of air transportation must be removed before they can determine, in any definite way, the extent to which they will need to expand their use of Air Express after the war. I feel that any future expansion in air express traffic should not adversely affect the orderly processes of marketing and distribution, which are vital elements in our national economy.

In return, they asked us two pointed questions:

1. What are Air Express rates going to be in the post-war period?

2. Are we going to be deprived of any of the advantages of your nation-wide completely coordinated and integrated air-rail service?

As to the first question, diligent study of developments in aviation indicates such a wide difference of opinion as to costs involved in air transport service after peace comes that this question cannot be satisfactorily answered at this time. There is not settled cost basis by which any shipper or receiver can determine now what portion of his traffic can be moved by air in the post-war period. Until some degree of exactness is achieved in the matter of rates and charges, the continued forecastings of what can and will be moved by Air Express are not constructive and do more harm than good.

The answer to the second question, so frequently put to us, as to the future place of Air Express and Air-Rail services of this company, can only come from the public authorities controlling such matters. I have in mind the Civil Aeronautics Board and the Congress. That is something in which the public interest is of great importance and that interest should be protected. No one organization can serve the public, as we have done for more than a century, without creating a customer interest that cannot be denied.

Our Air Express service has developed from a contractual relationship with the air transport companies which provides the greatest possible convenience and availability to the public. For more than 16 years that contractual relationship has been and is now a harmonious one. Some of the theorists would have the public believe that our Air Express Division is decadent and unable to cope with the transportation demands of tomorrow and that the airlines should, therefore, break off this arrangement, substituting they know not what. They seem to have little regard for the public interest which is paramount.

I want to point out that these uninformed statements and obstructive articles do not originate with our airline friends, who are our partners in this enterprise. Others find nothing wrong with our handling of Air Express, except that Railway Express is railroad owned. In making this criticism, they frequently use the word "dominated" by the railroads, which is not the fact. We have consistently pursued a policy of aggressively and intelligently promoting the transportation of property by air and intend to continue to do so in future. That, I think, is a full answer to these assertions.

We are convinced that the greatest advantages to the public will flow from a unified operation as conduced by our Air Express Division. We know that the consolidation of all of the old express companies in World War I and its continuation thereafter greatly improved the express service accomplishing elimination of duplicate facilities, vehicle services and other departments, and thus made possible maintenance of lower rates that could otherwise have been offered to the shipping public. The reverse of that as to Air Express service is definitely not in the public interest. The common bond that has joined air express and rail express under a single responsibility is indispensable to a dependable, expeditious and flexible transportation service.

In planning for the future, especially in the field of commercial air transport, it would seem shortsighted to overlook the gathering power of this nation-wide organization with a fleet of more than 15,000 motor vehicles, 60,000 employes and 23,000 places of business. It provides the

(Continued on Page 31)

LOW BIDDER FOR TOMORROW'S *Air Traffic*

Setting new standards for twin-engined aircraft... hauls larger payloads further – faster

No post-war plans for commercial air-operations—transport or cargo—can overlook the economic possibilities of Curtiss Commandos.

As a cargo carrier, it will haul a 9 ton payload 3 miles a minute at rates which will prove highly attractive to shippers.

As a passenger transport, it will offer equally interesting possibilities for luxurious, yet low cost air travel.

Today the Curtiss Commando is doing a prodigious job in every theater of war under the toughest known flight conditions.

Tomorrow it will wing its way into peacetime leadership—a practical high-speed, low cost carrier that will revolutionize present conceptions of load carried, time required and cost of operation. LOOK TO THE SKIES, AMERICA.

Curtiss-Wright Corporation, Airplane Division, Buffalo, Columbus, St. Louis, Louisville.

All-Cargo Airline Operations Growing Fast in Caribbean

A new all-cargo air service, Aerovias Venezolones, S. A. (Avensa), to operate within Venezuela, has been organized. It will serve interior points. Technical guidance for the line will be contributed by Pan American Airways, which will have a minority stock interest. It will carry cargo on a charter basis as far south as Santa Elena, near the diamond fields, operating Ford tri-motor planes.

Meanwhile, Pan American Airways has opened an all-freight service from Miami to certain Caribbean points. Two principal routes are being operated—between Miami and San Juan, Puerto Rico, and between Miami and Barranquilla, Colombia.

Antilla, on the North Coast of Cuba, and Port-au-Prince, Haiti, will be served on this 1200-mile route between Miami and San Juan. Kingston, Jamaica, will be a stop on the 1100-mile trans-Caribbean route to Barranquilla.

These points will be served by a four-engine flying freighter which will carry 8800 lbs. of commercial cargo at a cruising speed of 150 miles per hour.

UAL Saves Boy's Life By U. S.-Australia Trip

Praise for two crews of United Air Lines who saved a boy's life by flying a shipment of penicillin over an Air Transport Command route from San Francisco to Australia, was voiced today in a letter received by United from a high official of the Australian government.

The penicillin shipment started from Washington when the Australian War Supplies Procurement office there received an urgent call from Australia for a supply of the drug in order to save the life of Peter Harrison, 7-year old son of Surgeon Lieutenant Commander L. J. Harrison of Sydney. An Army Air Forces officer carried the parcel to San Francisco and from there it was shipped aboard an Air Transport Command plane to Australia. The shipment left Washington on Saturday and reached Australia the following Thursday.

Bendix Unit Changes Name

Bendix Aviation Ltd., North Hollywood, Calif., one of the nation's leading producers of aircraft radio and hydraulic equipment, is now operating as the Pacific division of Bendix Aviation Corp.

PASSENGER and CARGO

Flights..Twice Weekly

MIAMI TO CURACAO

IN LESS THAN 10 HOURS

via Kingston or Port Au Prince

AIR EXPRESS RATES FROM MIAMI TO:

Camaguey	23¢ per lb.
Kingston	34¢ " "
Port Au Prince	39¢ " "
Aruba	73¢ " "
Curacao	75¢ " "
La Guaira	75¢ " "
Trinidad	1.00 " "

K. L. M. ROYAL DUTCH AIR LINES

521 Fifth Ave., New York 17, N. Y. — MU 2-7894 or any Office or Agency of Holland-America Line

Miami Agents: Air Express International Inc., Columbus Hotel Bldg.—Tel 2-1753

WORLD'S OLDEST OPERATING TRANSPORTATION AIRLINE

IT'S AN Air WORLD

By L. A. GOLDSMITH, *Economic Analyst*, AIR TRANSPORTATION

THE natural element of a fish is of course water. But this is a fish story that takes to the air, and what's more *lands* way up in the air on famed Lake Titicaca, the highest steam-navigated lake in the world with an altitude of 12,500 ft. This fish story is unique, because it includes Pan Americanism and involves three countries—the United States, Peru and Bolivia—plus Air Cargo and, eventually, good eating.

An Honest-To-Goodness Fish Story - With A New Good-Neighbor Gesture

This fish story began with a Good Neighbor gift from the U. S. to the Government of Peru of half a million fertilized fish-eggs! These fertilized fish-eggs were presented by this country to Peru for the purpose of restocking and improving the food-fish stock in lofty Lake Titicaca, which marks the boundary between Peru and Bolivia.

THE shipment, from the Great Lakes, consisted of whitefish eggs from Ohio, and many thousands of lake-trout eggs from Michigan. These "eggs" were not selected on a hit-or-miss basis by any means. Eugenic experimentation was actually undertaken on the part of the Fish & Wildlife Service of the U. S. Department of the Interior. The U. S. Bureau of Fisheries also developed further experimentation at Lake Titicaca on the spot, in consultation with the Peru-Bolivia Fish Hatcheries. Such care was exercised that it might be said the result can only be pedigreed progeny of high degree among fish.

Selection By Eugenic Experimentation-Result Pedigreed Progeny

The U. S. Government considered the fish-egg shipment so important that they granted priorities for its air transportation. The fertilized eggs were packed in ice to be kept at constant temperature. They were then shipped in specially constructed, insulated shipping cases, weighing about 60 lb. when packed. After that the shipment was flown to Miami via domestic airline, and transferred there to Pan American, which transported it as far as the Canal Zone. There transshipment was made to Pan American-Grace, which took over technical handling of the eggs, giving them the most expert "pre-natal" care. Ice was kept in special hoppers on top of the egg trays at all times, with the temperature carefully watched.

All transportation changes were carefully co-ordinated, since time was an essential factor in keeping the eggs in prime condition. The 4,000-mile flight took only four days.

And it won't be long before Peruvians and Bolivians as well as visiting North Americans will participate in the successful conclusion of our fish story. They'll have a chance to satisfy their appetites with succulent samples of the pedigreed progeny resulting from this inter-American piscatorial union.

SOMEWHERE in China" is the answer to how and where some of the money we contribute to the Red Cross is spent. Under the cabled dateline of Feb. 19, a dispatch comes in from "Somewhere in China." From over the hump of the Himalayas a full-blown American Red Cross Club was flown to China, it reported. Instead of war supplies for Chinese military needs, this transport brought personnel as well as the furnishings which go to make a Red Cross Service Center.

Red Cross Service Center Flown to "Somewhere in China"; Chinese Girls Lead Conga Line

American soldier boys at this faroff Chinese air field rubbed their eyes and thought that they were "seeing things" when out of the plane stepped three American girls. One was Gerry Lennox, a young New York actress of the *Gentlemen Prefer Blondes* type—then came Eleanor

Liss, White Plains, N. Y., and Mrs. Alma Kerr, of Chicago. The three girls reported to General Joseph Stilwell and then started to "step on it." In no time at all they had converted a former mess hall into a homelike, attractive club.

All the "fixings" were there to make the club a Mecca for the boys, some of whom have been stationed in China for over two years. Colorful furnishings, games and party decorations, as well as quantities of recordings of the latest American "name" bands. The music-hungry soldiers went for all this in a big way. The only fly in the ointment was the scarcity of girls. But the Red Cross workers took care of that, too, rounding up a number of young Chinese girls. Many of these had attended American schools, and were quite capable of leading a Conga line, and even of jitterbugging.

Chinese officials cooperate with the Red Cross, and do their part in providing guides for nearby points of interest. Even visits to private homes are arranged. And when the boys come marching home, they will have had opportunities to learn to know and appreciate the manners and customs of people they probably used to think of as "queer foreigners."

More power to the Red Cross. When we contribute our annual donation this month, perhaps it will give use a lift to visualize the far-flung activities of this remarkable organization, which carries on so effectively in peace or in war.

Quotable Quotes From What the Leaders Are Saying about Air Power

AIR Power dominates military geography today and will dominate economic geography tomorrow. That sums up in a nutshell what so many leaders are thinking and *saying*. It is very important to the development of Air Transportation, because what the leaders think and say today the people think and do tomorrow.

The variety of thoughts and expressions make one "furiously to think," as the French used to say. So just for the record, I picked out a few at random, because they all add up to the same thing, and that is: that "IT'S AN AIR WORLD" today, and will be more so tomorrow. And as for the day after tomorrow, as we all know, *that* depends on what we think and do today.

So here's what the leaders are saying:

SENATOR RALPH O. BREWSTER of Maine: "Among the essentials that the U. S. must have is an all-American system of communications reaching around the world, to serve our trade, travel and diplomacy; a comparable world airport network making use of airports in which we have invested $500,000,000."

PRESIDENT ROOSEVELT recently laid down two basic principles—the right of innocent passage from all nations throughout the world, and the right to land anywhere for refueling and non-traffic purposes.

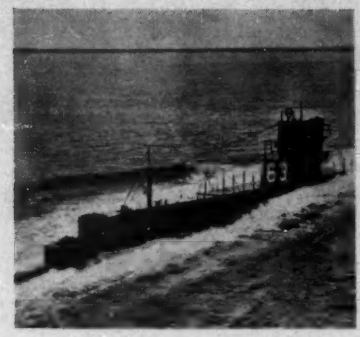
LORD BEAVERBROOK, British Minister in charge of Civil Aviation, seems to agree with both the President and the Senator when he says: "The British Government have no desire to exclude aircraft of other nations. We demand no prescriptive right to the use of air fields for ourselves. Rather do we mean to use them for steadily developing civil aviation throughout the world.

RALPH DAMON, vice president and general manager of American Airlines, in a recent speech before the American Society of Mechanical Engineers: "If we are to capitalize beneficially for mankind on aviation, and if the potential expansion, as we visualize it now, is to become a reality, then it is necessary for many of us to change our thinking to a worldwide basis. . . . Aviation's contribution to our civilization will continue to the fullest extent, *provided* constructive and sympathetic public and governmental consideration is given *now* to the future of Air Transportation. But unless this consideration is given soon by our Government in collaboration with the other United Nations, *the inaction may prove detrimental to what we hope to establish as the air future.* . . . Could Aviation speak as an individual, its philosophy would be: *I can annihilate space and time; to do this I must be understood. I must be used to supplement other forms of transportation; I must be nurtured and not whipped. I can promote understanding among peoples; I can be the implement of peace, prosperity and happiness for all.*"

Possibly some of the foregoing thoughts may startle those who believe that cargo-by-air is something not to think about at this time, or to postpone for some far-distant future. But, remember, IT'S AN AIR WORLD, *right here and now.*

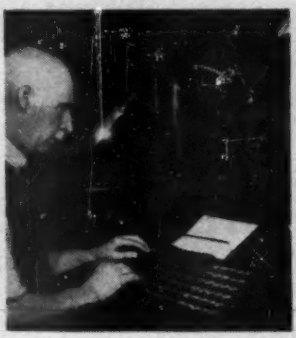
HOW MANY CAN YOU NAME?

Of the scores of products shipped to or from Mexico by American Airlines' International Air Express, 12 are mentioned on this page. *Can you name the four that are illustrated?*



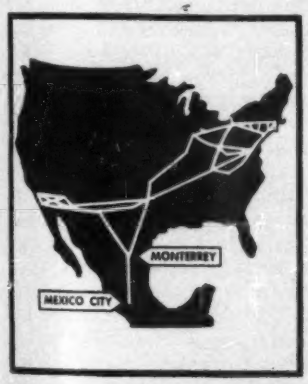
1. Which is vital in a submarine's periscope?
(a) Quartz crystals (b) Lenses
(c) Cement

2. From the juice of the Maguey plant comes
(a) Scotch Whisky (b) Gin
(c) Tequila



3. In the instrument he operates are
(a) Tractor parts (b) Linotype machine parts
(c) Hydraulic pump parts

4. She's all dressed up in
(a) Ermine (b) Angora wool
(c) White hare's fur



YOU'LL FIND THE CORRECT ANSWERS below, but before you turn this page upside down to check your score—

Not only have all the products pictured above traveled the swift, time-saving air-way between the United States and Mexico via American Airlines' International Air Express, but so have *all* of the products named beneath the pictures! And they're just a small percentage of the wide variety of items that ride the skies in Flagships.

For speed and simplicity, it pays to use American Airlines' International Air Express. For pickup, call Railway Express Agency, *Air Express Division.*

HERE ARE THE ANSWERS! Give yourself 25 points for each correct answer. A score of 50 is good; 75 excellent; 100 terrific. 1.—(b). 2.—(c). 3.—(b). 4.—(a).

THE NATIONAL AND INTERNATIONAL **AMERICAN AIRLINES** *Inc.* ROUTE OF THE FLAGSHIPS

Railroads' Case: Do They Fit Into The Air Future?

New Haven's Palmer Ably Presents Argument For 'Integrated' Transport

By HOWARD S. PALMER
President and Trustee, The New Haven Railroad

WHO can resist the urge to look up when the roar of motors is heard in the sky? We all do it. For to us it is the symbol of freedom and exciting adventure—of wartime exploits—of young men who have taken to wings as if born to them—of their devotion and heroism as they write a page of flaming history across the skyways of the world.

But to different people all around the world the roar of motors in the sky has different meanings. To an enemy city it means death and destruction. To an army it can mean either terror or protection. Today here in America it means increasing air power—air superiority. And our hearts send out a prayer for the courageous fliers winging their steadfast way toward the goal of ultimate victory.

But what will it mean tomorrow—when the guns cease firing, and the sky is filled with planes winging their way back to our shores? What will it mean to you—and to us railroaders?

Shall we look up then? Will these roaring motors be as much a part of us as the mellow notes of a locomotive whistle, or the click of singing wheels along a clear stretch of track?

Or will they sound a discordant note for the many thousands of men and women who stood by our nation in time of war? I am speaking of the railroaders who have been doing a job that has brought forth warm praise from our military and political leaders alike.

Shall we look up tomorrow with confidence—when the skies are divided into thriving lanes of air commerce—knowing that we have a part in this vast new expansion in transportation? Or are their roaring motors to sound an ominous threat to the jobs and future of thousands of railroaders? These same railroaders who have spent a lifetime building up industries and recreational advantages—and who form an important part of community life.

The part the railroads are playing in this war will go down in history as one of the decisive factors in the victory that is now in the making. Rail transportation is proving to be a strong and indispensable link in the chain that is slowly but surely shackling the Axis nations within their narrowing borders. General "Hap" Arnold, Commanding General of the Army Air Forces, brought this point forcibly to the mind of every American when he publicly stated in December 1943 that the loss of domestic rail transport would effectively stop all present and proposed Air Force operations. This is a

broad statement. But it illustrates how vital the railroads are to our national security in times of emergency. For future security America must see to it that the railroads not only progress but prosper in the years of peace.

But there are those who ignore the miracles our railroads are performing today, who discount our united efforts to speed this war to a victorious conclusion. In fact, they would repay this industry, that contributed most in the mobilization and the efficient transportation of masses of men and materials of war, by denying it a fair place in the transportation world of tomorrow.

'Monopoly' Charge Denied

They say that to permit the railroads to engage in air transportation would result in a railroad monopoly. Yet they who preach that this would be a monopoly would on the other hand create a greater air monopoly—financed in large part by the taxpayers of this country, through subsidies.

You may be wondering why we [of the New Haven] want to be in the air business. Some people have even said that we want to get in there to stifle it, so as to keep our investments in surface equipment and right-of-way safe. Now there is no need for me to tell you that nothing can hinder the development of air transportation in this country. You know it and I know it. It is not the American way to obstruct the development of any invention merely because it encroaches upon established methods or services. If it were otherwise, we would still be riding in stage coaches.

To be sure we do want to protect our investments. We are in the transportation business and we believe the way to protect these investments is to give the shippers and travelers of New York and southern New England, the opportunity to ship and travel by the method best suited to their purposes. These shippers and travelers are our customers now and, like other business men, we want to keep them. We want to have the right to offer them these new services—in competition, if you please, with other legitimate airlines that can obtain licenses to operate in our territory.

We believe that we can offer the shippers and travelers of New York and southern New England a better, more efficient, more dependable service *at lower cost*—through coordination of all three modes of transportation than could possibly be offered by separate, uncoordinated, competitive services.

Few subjects have been more hotly debated than the question of whether or not railroads shall be allowed to own or operate airlines.

Government policy in recent years has been against either rail or ship ownership of airlines, and only last year American Export Lines was ordered by the Civil Aeronautics Board to divest itself of its interest in American Export Airlines. Meanwhile, another form of transportation, Greyhound Lines, has its hat in the ring with one of the most ambitious of all postwar air plans, calling for a nationwide helicopter network.

Railroads in general haven't had very much to say on the subject. Airline president after airline president has talked himself hoarse and shuddered with fright at what would happen if railroads were ever allowed so much as a tiny foothold in air transportation.

But now comes Howard Palmer to speak for the railroads, as he has done before—notably on *America's Town Meeting of the Air* on Nov. 18 and more recently before the Advertising Club of New York.

***Air Transportation's* readers will be interested in comparing his views with those of air transportation men who have spoken through these pages. The Editors will be glad to receive readers' opinions on the same subject.**

Joint Operation Proposed

It is not necessary for us to operate or control an airline to accomplish this coordination. We would prefer to join forces with an already established airline. We want to have a part interest in it, so that we shall be able to participate in the prosperity that is expected to result when commercial aviation begins to put into practice all the lessons learned through worldwide military operations.

Yes, our railroad wants to join forces

with an airline and we shall contribute much to such a combination. Our knowledge of the territory—our knowledge of the needs and the problems of shippers, resort owners and travelers alike—will advance the progress of any airline we tie in with, by years.

The airplane that ties in with us will have all the advantages of our highway pickup and delivery freight service . . . our bus routes running by many proposed airport sites . . . our widespread private communications systems . . . our warehouse facilities . . . our ticket selling agencies . . . our passenger and freight solicitation staffs already established in nearly every city and town in southern New England and every important traffic center in the U. S.

In fact, we believe that, if the present ban against surface carriers engaging in aviation were lifted, we should soon be able to announce the formation of a coordinated rail-air-highway system to serve southern New England.

History Favors Railroads

While the ideas I have been outlining are those which we think should be followed, I do not want to convey the impression that if, through short-sighted policies, we are refused the right to participate in air transportation, disaster for the railroads will result. *It will not.*

Throughout the history of our nation, new forms of transportation have been developing continually. Railroads were allowed to participate in all of them—from the time of the horse-drawn car that hauled the granite for Bunker Hill Monument—to the huge modern locomotives that haul the mile-long freight trains of today.

I tell you this to impress you with the fact that this refusal to allow us to enter the aviation field is the first instance in the history of America in which the railroads have been barred from the development of a new mode of transportation.

We sincerely hope that public opinion will raise its voice in protest against such discrimination. And that as a result laws will be enacted that will allow coordination of rail-air-highway systems where it will benefit the area to be served.

We also hope that our Congress, in considering the Lea Bill, or any other bill affecting transportation, will recognize the necessity for a fair and reasonable national transportation policy that favors no *one* form of transportation, but considers the rights of airways, highways, waterways, and railways in the transportation future of America.

But we are not awaiting the outcome of this controversy to make plans for the future. The railroads will not be caught napping.

NH Plans for Postwar Era

Our plans on the New Haven call for new passenger cars—streamlined cars that already are being dreamed about by America's foremost designers. They will be pleasing to the most sophisticated tastes and will embody the very latest in comfort and convenience. Seats will be as luxurious as your favorite easy chair at home. Lounge and smoking cars or compartments for coach passengers will be designed to encourage relaxation and sociability. The uncrowded comfort and relaxation of a trip on our post-war railroad will offer many enjoyable moments. Our dining and grill cars will contain many luxuries and conveniences that are still on the drawing boards of the manufacturers. All this will add up to more comfort for your rail trip—to more freedom of movement for our coach passengers and the opportunity to get up, walk around and stretch their legs.

Another matter to which much serious thought is being given is the price of a railroad ticket. Many industries selling essential products have been successful in reducing prices when demand fell off, thereby attracting new customers through these price reductions. This has proved to be sound sales practice for them.

For many reasons—some beyond their control—the railroads have not followed this practice. In fact, several times they have done just the opposite—raising passenger fares when business fell off. The results of this policy since the last war have left much to be desired.

Lower Rail Fares Forecast

This question of pricing our services to appeal to the greatest number of potential customers is an important one—and you may be assured it is a problem that will be faced and dealt with by *our* railroad on

a sound and realistic basis, regardless of what procedure has been followed in the past.

And this brings us to the subject of merchandising. A few years ago many railroads, including our own, spent much less than one-half of one per cent of gross revenues on selling. We had the idea that it was not necessary to sell transportation. That when folks made up their minds to go somewhere, they would go any way they pleased—and nothing we could say would influence them to go *our way*. We assumed everyone knew all the advantages of going by train.

Today we do not believe this. We have learned a great deal about the persuasive power of modern advertising and merchandising methods. And you may expect to see us merchandising our own products along the same scientific lines which other industries have found so profitable.

We firmly believe that after this war is over there will be released an avalanche of pent-up travel desires. People will want to go places and see things. We believe we can influence many of you to come to the summer and winter resort areas of New England. And we believe we can influence many New Englanders to come here to New York. Then when we tell our story of the advantages of postwar train travel—we shall be able to persuade a great many of them to travel on New Haven trains.

This, then, gentlemen, sums up our railroad's pattern for the postwar future:

If the people of America are willing, we will be able to offer our shipping and traveling friends the kind of coordinated transportation they want—when they want it—by rail, highway or air.

But regardless of our participation in the air future, we plan to give the people of New York and the great industrial states of Massachusetts, Rhode Island and Connecticut a postwar service unsurpassed in efficiency, dependability and comfort.

The Author

HOWARD SHIRLEY PALMER *was born down east in Maine in 1885 and started railroad life, like many railroaders, very early. At 16, he began a six-year apprenticeship with the Portland & Rumford Falls Railway, moving to the New York, New Haven & Hartford in 1907.*

In true railroad-president tradition, he moved upward to clerk, assistant traveling auditor, express accountant, statistical accountant, auditor of disbursements, federal auditor, comptroller, vice president and finallly, in 1934, president.

No bound-to-the-rails transportation man, he has also long been active in the management of the New Haven's street railway, bus and ship affiliates, including the New England Transportation Co., Connecticut Co., Berkshire Street Railway Co., Springfield Railway Co., and New England Steamship Co.

Long well known as an articulate voice for railroads' interests, he tangled verbally on the Blue Network's "Town Meeting" program last November with the redoubtable onetime trust-buster, U. S. Circuit Judge Thurman Arnold and one of the smaller airlines' most able spokesmen, Chicago & Southern's Carleton Putnam.

New Brazilian Plant Is First in Continent To Build Plane Motors

In the summer of 1942 it was a boggy swampland, crawling with crocodiles. Today, it's Brazil's fastest-growing, most modern factory, which will soon augment the United Nations' supply of aircraft engines.

That's the story of the National Motor Factory (*Fabrica Nacional de Motores*), nestled in the foothills of the steep Serra do Mar mountains near Rio de Janeiro. Behind that story is a remarkable record of engineering skill and of closest Brazilian-American economic cooperation.

When it gets into production early this year, it will be the first plant in Latin America to build airplane engines from start to finish.

Driving power behind it is dynamic, good-humored, 43-year-old Air Brigadier Antonio Guedes Muniz, of the Brazilian Air Force. One of Brazil's leading airmen, he designed and built his country's first plane in 1935—The Muniz M-7 biplane, still in areo club use today.

Brazil's transportation future, owing to the country's giant size and its varied terrain, seems bound more to the airlanes than to railroads. That is why there has long been talk in Brazil of a national aircraft industry for both planes and engines.

THE FLYING LAWYER

HEAD of Pan American-Grace Airways, the American-flag airline that operates the whole vast length of the western half of South America—and to Buenos Aires as well as through Argentina and Bolivia—is Harold J. Roig, hard-working air executive with a keen knowledge of South America and a wide experience in international transportation.

When W. R. Grace & Co. and Pan American Airways joined hands in 1928 to start Panagra, first American airline to Buenos Aires, Roig became interested in the new company. Today, Panagra runs through eight Good Neighbor nations, from Panama to Argentina, with 8800 route miles, and has become a vital link in the wartime transportation and communication chain of the hemisphere.

Roig became president of Panagra in 1939. Not satisfied to sit in his New York office and run his airline from a distance, he makes frequent trips over the Panagra network a routine procedure. Despite multiple duties as an officer and director of several Grace interests, including the Grace National Bank, Roig devotes most of his time to the business of running the airline.

An outspoken enthusiast on the future of South America and anxious to help carry out the promise that aviation offers there, Roig has won wide recognition for his work and has been honored on many occasions by grateful South American governments.

In June, 1943, he was awarded the National Order of Merit of Ecuador on behalf of President Arroyo del Rio as "one of the great pioneers of the Good Neighbor Policy." The Order of the Condor de los Andes, highest civilian honor bestowed by the Government of Bolivia, was presented to him in September, 1943, at a reception in New York attended by many officials of Bolivia and other American republics.

Roig was untiring in the successful campaign waged by Pan American-Grace in cooperation with the U. S. and Latin American governments to oust the network of Axis airlines from the countries which Panagra serves. Much is owed to him for the speedy completion of this important defense measure in this area during the crisis which culminated at Pearl Harbor, when Axis airlines were eliminated from Ecuador, Bolivia and Peru and between Chile and Argentina. By extending Panagra's own services and by undertaking the supervision of Lloyd Aereo Boliviano, much better service than that provided by the Axis lines was made available to air-minded peoples along Panagra's route.

Under the Roig administration Panagra undertook an extensive program for modernizing and improving airports. Today he looks forward to high-speed express routes to be flown by long-range supertransports to unite the major cities of the continent. However, he believes that the future of air transportation lies not alone in such trunk routes but also in the type of domestic point-to-point and feeder air services which Panagra has always sought to develop along its own trunk route, and in cooperation with local national companies, reaching localities never before available by speedy transportation—a service of utmost importance in the development of South America.

Born in Poughkeepsie, N. Y., in July, 1885, and educated at Cornell and Columbia, Roig stepped from classroom to law office in 1909 and for six years practiced law in New York. Following that he became counsel, then successively secretary and vice-president and director of W. R. Grace & Co. A resident of New York, with an estate at Kings Point, L. I., which he calls his farm, Roig is married and has four daughters, one of whom is married to a member of the Grace staff now on duty in Lima, Peru—the home office of Panagra.

Last month, he happily celebrated his fifth anniversary as Panagra's head. In the five years, he could look back on a gain in total route mileage of 55 per cent, in plane-miles flown of 205 per cent, in passenger-miles flown of 535 per cent (from 1938's 9,037,919 to 1943's 57,500,000 passenger-miles). But the biggest gain of all was in air cargo: 1938's puny 161,344 lbs. hauled by air had blossomed into last year's resounding total of 2,000,000 lbs.—a cool 1,000 tons—and the real cargo-by-air was still to come.

AIR CARGO PERSONALITIES

HAROLD J. ROIG

President, Pan American-Grace Airways, Inc.

$128,000 Cargo Payload Was Hauled by Martin Mars On Historic Hawaii Flight

$54-Per-Mile Theoretical Take At Regular Mail Rates Helps Prove Big Ship's Efficiency

ON Jan. 26 the Naval Air Transport Service's 70-ton cargo flying boat *Mars* slid in to a perfect landing at the Alameda, Calif. Naval Air Station after a 12-hour and 17-minute flight from Pearl Harbor. Inside her spacious hull she carried eight passengers and 20,000 lb. of air mail, the greatest payload ever brought in from the Islands by a single airplane.

What interested air transportation officials, however, was not so much the amount of weight carried as the amount of revenue it would have represented under peacetime conditions. The current air mail rate from Hawaii to the mainland is 20 cents a half ounce. Assuming that it was all paid mail, the postal portion of the *Mars* cargo in itself represented a payload of $128,000 for the single flight. When one adds another $2,000 to cover the eight passengers, the total revenue for this single 2,400-mile flight becomes $130,000, or more than $54 per mile. To obtain a similar per-mile revenue on a 2,400-mile flight with a standard 21-passenger airliner, one would have to charge each passenger more than $6,000 for the trip and make the flight in easy stages to permit refueling en route.

From the day last October when the *Mars* entered the final stages of its company flight test program by completing a 32-hour and 17-minute, 4,600-mile, non-stop, non-refueling endurance flight, the Glenn Martin-built 70-ton super flying boat has continuously demonstrated what its exponents had always claimed — namely that the cargo-carrying efficiency of the flying boat increases with the size of the airplane, and has demonstrated it under widely varying conditions.

On the first of its three record-breaking flights—the October endurance run—the *Mars* was still in test status. Recently converted from a patrol bomber to a cargo boat, it took off from Chesapeake Bay to prove that a flying boat of its size could maintain sustained flight for a period of 28 hours. On this flight its only passengers were Martin flight-test engineers and U. S. Naby observers, its only cargo test equipment and provisions for the men aboard. When the giant flying boat landed 32 hours and 17 minutes later after cruising around a course marked by Norfolk, New York, Cape Cod and Baltimore, she had traveled more than 4,600 miles, smashed both the international and American closed-circuit distance marks for seaplanes, and still had enough gasoline left in her tanks for several additional hours of flying.

Less than two months later the *Mars*, then in the hands of the Navy Trial Board, was ordered into active service. Following three days of intensive preparation she took off from Patuxent River, Md., under the aegis of the Naval Air Transport Service for Natal, Brazil, carrying a cargo of 13,000 lb. of Christmas mail for the Armed Services [AIR TRANSPORTATION, December, 1943]. She took off from Patuxent River at a gross weight of 148,500 lb., greatest ever lifted by an airplane, and made the 4,375-mile over-water flight non-stop, landing at Natal 28 hours and 25 minutes later.

YOUR AIR EXPRESS shipments ought to be handled like hot potatoes, not "parked" on the floor awaiting a "routine" afternoon pick-up. Pack early, phone immediately, and avoid end-of-the-day congestion when Airline traffic is at its peak. That's the way to get fastest delivery by AIR EXPRESS. You're paying for speed... GET ALL YOU CAN! It's easy. SHIP WHEN READY!

And to cut costs—AIR EXPRESS shipments should be *packed compactly* but securely, to obtain the best ratio of size to weight.

A Money-Saving, High-Speed Tool For Every Business

As a result of increased efficiency developed to meet wartime demands, rates have recently been reduced. Shippers nationwide are now saving an average of more than 10% on Air Express charges. And Air Express schedules are based on "hours", not days and weeks—with 3-mile-a-minute service direct to hundreds of U.S. cities and scores of foreign countries.

WRITE TODAY for "Vision Unlimited"—an informative booklet that will stimulate the thinking of every executive. Dept. PR-3, Railway Express Agency, 230 Park Avenue, New York 17, N. Y.

AIR EXPRESS
Gets there FIRST

Phone RAILWAY EXPRESS AGENCY, AIR EXPRESS DIVISION, Representing the AIRLINES of the United States

Having shown on the outward voyage that she could carry a normal cargo further than any other airplane in existence, the *Mars* on the return trip demonstrated that she could carry a heavier payload over a normal distance than any other airplane. Leaving Natal, she had 23,000 lb. of vital war materials stowed away in her holds. At Belem, Brazil, she took on an additional 12,000 lb., and carried this record-breaking 35,000-lb. payload 1,233 miles to Port of Spain, Trinidad, at an average speed of 165 miles per hour.

All told, the *Mars* covered 8,972 miles in 55 hours and 31 minutes flying time on its first war mission. Thus a total of 48,000 lb. of priority war material, as much as 10 standard cargo planes could carry, and well over the capacity of a regular freight car, was transported at an average hourly speed of 161 miles. The tremendous return cargo was brought to the United States in a little over four days, including a full day's layover at Port of Spain for unloading 12,000 lb. consigned there.

Following this mission, the *Mars* was assigned to service in the Pacific theater as a combined passenger and cargo transport between Alameda and Pearl Harbor. She left Alameda for the first time on Jan. 22 with 20 passengers and 13,800 lb. of mail and cargo, and crossed over to the Islands in 13 hours and 27 minutes flying time, considerably less than is normally required by transports on this run. Three days later she made the eastbound trip in 12 hours and 17 minutes, or at an average speed of nearly 200 miles an hour, carrying eight passengers and 20,000 lb. of mail.

While the *Mars* continues to demonstrate that she is one of the most efficient as well as the largest airplane in the world, the engineers of the Glenn L. Martin Co. who designed and built the 70-ton giant are already issuing warnings that "The Old Lady," as she is known to her crew, had better look to her laurels. In January the Navy placed an order for 20 more of these giant "flying Liberty ships" with the Martin company, and the report is that the production version will be even larger and more efficient than the prototype.

Among improvements to be noted on the new production model will be giant 99 x 92-inch main cargo hatches, a 5,000-lb.-capacity loading hoist which will run out under either wing on a monorail, wider bulkhead openings, and a complete installation of tie-down fittings, cargo skid-strips and engine dolly tracks. As a cargo transport, the new *Mars* class, first of which will be ready early next year, will be able to carry seven jeeps, even greater numbers of field guns or aircraft engines. As a passenger transport they will be able to carry 50 people in reclining chairs on the lower deck alone, and as a troop transport 132 soldiers, all seated. The new version is also easily convertible as a hospital ship and to a wide variety of postwar purposes.

NOTE: On March 12, the Navy announced that the "MARS" just broke another record—this time bringing in the largest air-mail load in history from the Pacific war area to the United States.

Nearly 800,000 letters from service men were loaded aboard the Mars at Pearl Harbor, Hawaii, and deposited at San Francisco less than twenty-four hours later, the Navy disclosed. The letters weighed 28,846 pounds. An additional 1,200 pounds of critical war material also was aboard.

The Mars record-breaking mail load is some 9,000 pounds heavier than any prior mail cargo.

Sikorsky's Helicopter Wins Him $1,000 and 1st Fawcett Air Award

Igor Sikorsky, one of aviation's most fertile minds, won the 1943 Fawcett Aviation Award. The new Fawcett Trophy and $1,000.00 was presented to him by Major Al Williams, famous flier and Scripps-Howard newspaper columnist, on the CBS broadcast of *We, the People*, on Feb. 13.

The Fawcett Award, inaugurated this year, will be given annually to the person, persons or organization "making the greatest scientific contribution to the advancement of aviation as a public service." Judges who chose Sikorsky's helicopter development as 1943's No. 1 aviation advance included Captain Eddie Rickenbacker, president and general manager of Eastern Air Lines; Major Gill Robb Wilson, of the New York *Herald Tribune*, former head of the National Aeronautic Assn. [*see page 45*]; and Casey Jones, famous flying instructor expert. Representing Fawcett Publications on the board were W. H. Fawcett, Jr., president; and Co-editors Bill Williams and Roland Cueva of the magazine *Mechanix Illustrated*.

In addition to the Sikorsky award, six honor awards were made for contributions "of particular significance":

Professor Vladimir Ipatieff, Chicago, for his part in the development of 100-octane gas and the new fuel, triptane; the Army's Air Transport Command of the U. S. Army for its scientific pioneering of global air routes; the Engineering Department of Bendix Aviation

PROUDLY, IGOR SIKORSKY gazes at his latest triumph, the first Fawcett Award, won by his helicopter. Lookers-on are Publisher W. H. Fawcett, Jr., the award's donor; Major Al Williams, Scripps-Howard air columnist; Major Gill Robb Wilson.

Corp. for development of the gyro fluxgate compass, first major compass invention in 4,000 years; General Electric Co. and Bell Aircraft Co. for development of the jet propulsion plane; and Edward C. Wells, of Boeing Aircraft, for his design of the new B-29 bomber, with its reported postwar significance in air transport.

Air Express Now and Tomorrow

(Continued from Page 16)

single responsibility so necessary for the convenience and security of shippers. I know of no other organization that maintains so intimate daily contact with the shipping public as does ours.

The most useful contribution to postwar aviation progress that Railway Express Agency with its 105 years of "know how" can make at this time to see that Air Express users of today and tomorrow are kept fully informed of current developments so that they can take whatever steps may be necessary in their own interests. Imaginative thinking on the part of all of the real friends of air transport is necessary, but it must be tempered with realism and experience. This it will be our purpose to do in planning for Air Express in the post-war period.

Domestic Air Express Rate Schedule

A handy table for finding approximate shipping costs

Total cost between addresses in airport cities—No extras

Distances in Air Miles	WEIGHT IN POUNDS (*Effective July 15, 1943*)											
	1	5	10	25	50	100	200	250	350	500	750	1000
200	$1.00	$1.11	$1.26	$1.75	$3.50	$7.00	$14.00	$17.50	$24.50	$35.00	$52.50	$70.00
400	1.00	1.38	1.88	3.50	7.00	14.00	28.00	35.00	49.00	70.00	105.00	140.00
600	1.00	1.65	2.50	5.25	10.50	21.00	42.00	52.50	73.50	105.00	157.50	210.00
1000	1.00	2.19	3.74	8.75	17.50	35.00	70.00	87.50	122.50	175.00	262.50	350.00
1500	1.00	2.87	5.29	13.13	26.25	56.00	105.00	131.25	183.75	262.50	393.75	525.00
2000	1.00	3.54	7.00	17.50	35.00	70.00	140.00	175.00	245.00	350.00	525.00	700.00
2500	1.00	4.20	8.40	21.00	42.00	84.00	168.00	210.00	294.00	420.00	630.00	840.00

New Gas Turbine Promises Cheap Air Transportation

Improved Design Overcomes Heat Problem, Uses Safe, Low-Grade Fuels

Late in 1943, Air Transportation received first reports from Los Angeles of the rapid development there of a totally new type of gas turbine which, if successful, might well revolutionize cargo flying. Other gas turbines are also in experimental stages, but the one here described seems to hold even brighter promise. That is why the Editors asked Inventor Earl W. Braga, better known as a customhouse broker, to tell of its development so far. Technically-minded readers wishing further details may obtain them by writing the Editors.

By Earl W. Braga
Member, National Research Council, Rose Croix University

AIR transportation will aggressively compete with rail when it is placed on the same fuel-cost basis.

High-fractioned gasolines may be used without thought of expense in winning the war, but postwar aerial common carriers will definitely be forced to seek economy in fuels as well as simplified, rare-overhaul power plants.

With profound respect to the present radial motors in general, they present too complicated a power plant for general economical operation. Aside from the continual overhauls, and ever present hazards offered by the innumerable moving parts, the high consumption of topnotch gasolines is a real problem. The Diesel, while offering somewhat better economy in fuel, still is complicated with many moving parts, and its weight is very little less.

Those of you who have stood on the iron grilled balcony of the turbineroom of a liner at sea, listening to the sweet singing of its smooth turbines, very likely have speculated as to why someone has not brought the turbine down in size suitable for use aboard a plane, with its guarantee of stability, economy and quiet.

Lack of precious space for water supply and boilers has been the prohibitive answer. But, confronted with the problem of necessity, science always anticipates and has the cure in time. Its cure for the present problem is the Gas Turbine.

Feverishly, the laboratories are racing to convert principles of the successful steam turbine over to the lighter, more compact gas turbine, where water and boilers are dispensed with, and the terrific blast of the combusting fuel itself acts directly on the fan-bladed rotor of the turbine, turning it.

Although it is the combustion—the expansion of gases and heat—which drives the gas turbine, apparently the main reason to date that it has not been adapted to plane use is the heat problem. Methods of cooling the rotor must be devised before it can finally come out in quantity production.

While these practical experiments have been going on, aimed at your eventual benefit, letters patent have issued to a Gas Turbine developed on the Pacific Coast which, although an offshoot in another direction, promises earlier adaptation to aircraft use.

Briefly, the new turbine is of but one moving part, the rotor on a straight shaft.

Compressed air blows low-grade, cheap fuel oils into the rotor, and unlike the orthodox gas turbine under development, where the flame suffuses the rotor, this turbine has combustion within spiral tubes inside the rotor and is cooled by air on its outside.

Overhaul expense is reduced almost to nil, by reason of the engine's sole moving part. The average auto mechanic, with but a few minutes' coaching, could handle minor, infrequent adjustments.

Running cool, with no vibration to speak of, and with unusual quiet due to its continuous pre-cooled exhaust, the new gas turbine of which I speak could be stowed away aboard a plane or helicopter in almost the same manner in which the cool, quiet oil burner is put in your basement.

And speaking of helicopters, this writer implicitly believes that an improved type will supplant the stiff-wing plane in course of time; that the helicopter for passenger, express and freight transport will have two or more sets of rotors, one set forward and one set aft. The large sweep, movable wing rotor will be above, and beneath it a fast moving rotor, giving great speed.

Such a helicopter will offer greater lift, greater cubic capacity and more economy to commercial transport service than the plane. It will definitely hold its day in air transportation until the advent of levitating and propulsive beams or rays.

In the helicopter, this new aircooled gas turbine from the coast may be effectively stood on end with utter disregard to any of the lubricating problems of present motors. The gyroscopic action of the turbine's rotor also will have certain beneficial even-keel effect on the ship.

PROMISING cheaper fuels is one thing usually postponed, and bringing out something to use them is another—again usually postponed.

The airlines' competitors, the railroads and the steamship lines, use low-grade, low-cost fuels. Their motive power is not overhauled each trip or each week. Overhaul peaks are not like a saw edge, but smooth, like the gentle undulations of a ground-swell at sea. Air transportation will play into the hands of surface carriers as long as the high-octane gulf separates them.

Aside from the safety of bunkering with low grade fuels will be the unbelievably broad economy. Consider that average 100-octane gas sells for 16¢ per gallon, while average Diesel fuel costs 4¢ per gallon. Then consider that the low-grade fuel will run through the turbine slower than would gasoline in a poppet-valve motor for the same elapsed time and distance, and you have something to give new light for cargo transportation!

Even book writeoff of the ship, power plant and equipment would take lower, longer-period factors, and the combination, headed by low fuel-cost, would enable the air transport fraternity to schedule rates now believed impossible with present equipment.

Lines using low-grade-fuel power plants in their planes with lightweight engines, will be the ones to make rapid strides in establishing non-competitive, almost monopolistic services.

The high-speed, low-weight, low-cost-fueled *gas turbine* will make this promise an actuality, not in the dim distant future, but immediately, once the war is over.

La Guardia Cargo Up

Air express shipments in and out of New York's La Guardia Airport in January were up 25.9 per cent over January 1943, REA reported. There were 54,336 shipments handled, an average of 1,752 per day compared with 43,151 in January 1943.

Approximately 14,000 tons of cargo were flown over the nation's 18 domestic airlines during 1943, averaging 45 tons daily. Five all-cargo trips are now in operation, linking the east and west coasts in 16 hours average flying time.

Western Gains in Freight

Revenue passenger-miles flown by Western Air Lines in January, increased 103 per cent over the same month last year. Western flew a total of 2,951,258 miles, compared with 1,453,780 miles in January, 1943. Totals were almost the same as those of December.

Air Cargo carried by Western continued to climb to new heights in January also. The company's express pounds carried over the entire system during January represented a gain of 29 per cent; express pound-miles flown reached 42,159,580, a 58 per cent gain.

AIR-PORTATION NEWS
REG. U. S. PAT. OFF.

AIR PLANNERS TAKE TO AIR: **Mars-builder Glenn L. Martin, Col. N. Jay Boots,** *president of Boots Aircraft Nut Corp., Casey Jones, eminent aviation educator and executive committeeman of the new Aviation Section of the New York Board of Trade, and Eddie Dowling, radio star, meet at the premiere of the new Boots radio show,* **Wide Horizons,** *which went on the air at 4 p. m., EWT, Sunday, Feb. 27, over the Mutual Broadcasting System's network.*

Northwest Airlines Comes to Town; Port Authority Gives Welcoming Hand

Representatives of the Port of New York Authority appeared before the Civil Aeronautics Board on Feb. 28 to urge the establishment of a direct one-carrier air route between the Port of New York and the Pacific Northwest—by way of supporting the application of Northwest Airlines to establish a route from the Twin Cities to New York. Testimony on behalf of the Port Authority was presented by Walter P. Hedden, director of port development; John Walter Wood, air transportation analyst, [AIR TRANSPORTATION, January, 1944], and James C. Buckley, principal economist.

Hedden explained that the Port Authority's appearance before the CAB was similar to past participation by the Authority in proceedings before the Interstate Commerce Commission, Maritime Commission, and other federal regulatory agencies.

"There are substantial shortcomings," he said, "in the present services, and we believe that unless this fourth transcontinental link is established, the New York district and the United States will be at a competitive disadvantage in the period of developing world air routes. Furthermore, we believe that unless this link is established, the New York district will be denied the opportunity to develop fully its trade and commerce with the territory north and west of Chicago."

Wood outlined the "shortcomings" of the present two-carrier service, with enforced transfer at Chicago. He cited instances of flight delays, missed connections, and serious inconvenience to passengers, and stated that the proposed new route would furnish cheaper, speedier, more direct, convenient and regular service between the New York district and points north and west of Chicago.

"World wide air trade routes," he said, "must span not only oceans but continents. American flag transoceanic routes must be integrated with a direct American flag transcontinental route that will be competitive with the existing routes of Trans-Canada Airlines. This Canadian transcontinental link will be a vigorous competitor with U. S. flag airlines. To meet such competition, United States transoceanic carriers must have access to the shortest possible one-carrier route across the continental U. S.

"New York and Seattle will be air termini of major importance. The New York district is the nation's leading traffic-generating center. Eighty per cent of the nation's overseas passenger travel has moved through the port of New York. In this port there is under construction the world's greatest airport, suitable for the largest types of overseas and transcontinental planes. Seattle, on the other hand, is the closest United States port to Vladivostock, Manila, and of course to Alaska.

"We doubt that the air services of the future will follow the polar routes without touching North America, because of the lack of settled communities on such routes to furnish intermediate-point traffic. supplies, fuel, and other flight necessities. It is more likely that the transit traffic will be merged with traffic destined to or originating on the North American continent, the interchange being made at one Atlantic and one Pacific port. The establishment of the proposed one-carrier transcontinental route across the northernmost section of the country will reduce to a minimum the competitive disadvantage of United States Flag transoceanic airlines in competing for overseas air commerce between the trade centers of Europe and the Far East."

Buckley stressed the importance to the future development of the Port of New York district of speedy air service to the Pacific Northwest, which is one of the most rapidly developing sections of the country.

"The New York district is the nation's center for wholesale trade, business services, life insurance, business management, capital and security trade," he said.

The hearing climaxed the airline's five-year fight to complete a coast-to-coast line from Seattle to New York. giving every city on the present NWA route direct air connection with both seaboards. The route would shorten the present air route between Seattle and New York by 213 miles.

As first major step in the company's expansion plans, calling for routes to New York, Honolulu, Alaska and the Orient, the case is expected to determine largely the course of the airline's entire post-war program, Croil Hunter, NWA president and general manager, said.

FLYING FISH-EGGS: Enrique del Solar, chief of the Peru Ministry of Agriculture's bureau of fisheries, examines a shipment of trout and whitefish eggs air-cargoed from the U. S. to the International Fish Hatcheries at Chucuito, Lake Titicaca, Peru-Bolivia border. Panagra was the carrier, the U. S. Government the donor and shipper. (See "It's an AIR WORLD". Page 19.)

Pointing out that the expected shift in emphasis of war activity to the Pacific theater will tax all transcontinental transportation facilities far beyond existing capacities, Hunter said the new route would make the shortest and most direct connection at Seattle for traffic from the east to Alaska and the Orient.

"The importance of Alaska to the nation's security has become clear to every one now," he said. "It is certain to become even more important when the final blows at Japan are struck. We must do everything possible to see that the best supply routes to Alaska are established and maintained. Northwest Airlines believe it can contribute to this effort by providing this shortest coast-to-coast air service."

De Groot, Welch and Sleeper Are Named By N. Y. Board of Trade Aviation Section

Three more new members were named this month to the executive committee of the New York Board of Trade's new Aviation Section, headed by John F. Budd, publisher of AIR TRANSPORTATION.

Christopher de Groot

Two of the newcomers to the committee acquire their posts as chairmen of two new subcommittees. The third, Christopher de Groot, of Pan American-Grace Airways, becomes the section's official representative on the Board of Trade board of directors.

Chairman of the section's new aviation accessories committee is Howard S. Welch, export salesmanager of Sperry Gyroscope Co. and former vice president and general manager of Bendix Aviation Export Corp. During World War I, Chairman Welch served on the staff of Brigadier General William Mitchell, chief of air staff of the AEF's First Army. In 1919 he joined Studebaker Corp. as export salesmanager, later becoming president of Studebaker-Pierce-Arrow Corp. In 1936 he wrote and produced a film on two-way international trade for the National Foreign Trade Council which was widely acclaimed throughout the world.

Gordon C. Sleeper, Republic Aviation Corp.'s director of public relations, becomes chairman of the Aviation Section's aircraft and engine maufacturers' committee. Presi-

Howard S. Welch

Gordon Sleeper

dent in the late 20's of one of the country's pioneer radio companies, he became a Wall St. broker in 1930. Twelve years later, he left the Street to join Republic, in March, 1942, as assistant to the president. Today he is responsible for Republic's advertising and for sales research as well as for publicity.

Panagra's de Groot attended elementary schools in the Netherlands and Java. He graduated from the American High School in Tokio and attended the Universities of Berne and Geneva in Switzerland. A popular figure in transportation circles, de Groot has long been affiliated with traffic activities of leading transatlantic steamship companies. Since joining Panagra in 1940 he has handled U. S. traffic matters for the line. His educational direct mail campaigns and frequent trips into the field have done much to promote air transportation between the U. S. and South American nations.

Now Comes Portugal Into International Airline Planning Ring

Four Portuguese shipping companies are reported to be considering plans for establishing postwar airlines after the war to Brazil, Portuguese colonies and Atlantic islands.

Companhia Colonial de Navegacao is said to be hoping to establish air services to Portuguese Africa before the end of the war.

The companies are also said to be increasing their shipping tonnage and Companhia Colonial de Navegacao, which purchased German ships formerly interned at Lourenco Marques, is said to be renewing its fleet with the idea of re-establishing its northern European line after the war.

Minneapolitans Plan Big Aviation Show

Plans are far advanced for a big aviation exposition at the Minneapolis Municipal Auditorium Mar. 25 to Ap. 1, inclusive, to "display the attributes, the future and the opportunities of aviation in all of their phases."

To be known as the First Annual Northwest Aviation Exposition, the event has the sponsorship of the Greater Twin Cities Chapter of the National Aeronautic Assn.

"The postwar period is apt to be upon us before we realize the full significance of what it will bring. Aviation will hold a predominant place in that period; there is no mistake about that. But the public must be prepared along sound lines for what to expect," declares Tom Moore, chairman of the committee in charge.

Consolidated a Factor In Postwar Airlines as Well as Manufacturing?

Observers last month sensed that there might one day be still another facet to the already infinitely varied problem of who's going to run airlines after victory.

Reason was the announcement on behalf of Consolidated Vultee Aircraft Corp. that its little-talked-of transport division, Consairway, had completed close to 1,000 Pacific flights, hauling more than 20,000,000 ton-miles without accident.

Consairway on Apr. 23 will be two years old, though, due to the almost exclusively military nature of its business, little of its progress has ever been publicly told. Latest hint of the extent of its activity is the report that it is now flying approximately one schedule a day and is using 37 flight crews.

Should Consolidated (which nobody has even hinted so far) decide to remain in the field as an airline operator after the war, there may be still another question for CAB to decide: If railways, shipping lines and bus lines are to be barred from operating airlines, what about airplane manufacturers?

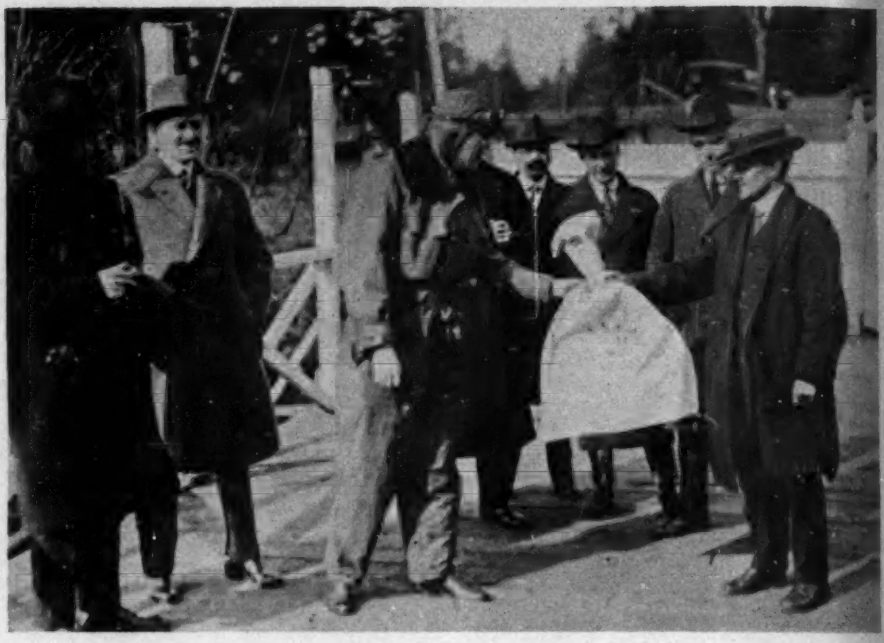
Express Employes Vie In Air Cargo Quiz

Early returns in the nationwide air express quiz now being conducted by Railway Express Agency among its employes indicates a spirited competition. War Bonds and other prizes are offered.

The quiz and suggestion program opened on New Year's Day and closed Feb. 29. An award committee of officials of REA is judging the entries, and will present a mechanical pencil to each of 1,500 other contestants.

P. H. Cummings

P. H. Cummings, air traffic executive of REA, heads the award committee. Other members are C. F. Messenkopf, traffic manager; R. S. Hampshire, superintendent of organization; C. J. Jump, assistant to vice president; and R. G. McLain, superintendent public relations.



NO. 1 INTERNATIONAL AIR MAIL FLIGHT. Pioneer Airman W. E. Boeing receives from members of the Vancouver War Exhibition committee a sack of mail which he and Eddie Hubbard flew to Seattle—the first international air mail between the two countries. Date: Mar. 3, 1919.

First Foreign Air Mail Took to the Skylanes A Quarter-Century Ago

The limitless possibilities of air transportation—made all the more promising by the rapid progress and development of military aircraft during the present war—passed one of its first milestones 25 years ago this month in the Pacific Northwest.

Occasion was the first international air mail flight between Canada and the U. S. A cold wind, bringing occasional rain squalls, was sweeping across the harbor at Vancouver, B. C., on the afternoon of Mar. 3, 1919. Off at one end of Coal Harbor on Burrard Inlet, near the site of the Vancouver Yacht Club, a small but excited group of men gathered at the end of a small dock. A small distance beyond, in the center of the cove, a Boeing C-3 two-place seaplane was anchored.

The plane's passenger and recipient of the mail pouch was W. E. Boeing, founder and at that time president of Boeing Airplane Co., a fledgling aircraft firm which had taken root a few years previously during the first World War. The other aviator in the group was Pilot Eddie Hubbard, veteran flyer destined to write air mail history.

Destination was Seattle, 125 air miles south. A landing was made for gasoline at Edmonds, a small town on the shores of Puget Sound a few miles north of Seattle. After refueling, the plane took off again, this time to settle finally on the waters of Lake Union, in mid-Seattle.

Boeing, as founder of Boeing Airplane Co., today can look to the world-wide achievements of the famed *Flying Fortresses*, the trans-ocean Boeing *Clippers*, and the high-flying Boeing *Stratoliners*. His name, as applied to the products of the company he founded in 1916, is feared by America's enemies and admired by her allies.

Hubbard became the first international air mail pilot assigned to fly a regular privately-contracted route on this continent—that between Seattle and Victoria, B. C. Service was inaugurated with a Boeing B-1 seaplane on Oct. 15, 1920. It was a time-saving link between America and the Orient, because much of the mail Hubbard carried was flown between the transcontinental trains at Seattle and the incoming and outgoing transpacific ships at Victoria. Hubbard successfully flew that route daily—logging 350,000 miles.

Canadian Pacific Opens Plant at Winnipeg For Air Maintenance

Growing importance of Winnipeg as an air center is underscored by Canadian Pacific Air Lines' decision to establish its main overhaul and repair plant for both aircraft and engines there.

T. W. Siers

T. W. Siers, one of the pioneers of Canadian aviation, now general superintendent of maintenance of CPAL at Montreal, will open new offices at Winnipeg this month. It is also planned to transfer the company's engineering division from Edmonton to Winnipeg, under the supervision of Aeronautical Engineer A. G. Clarkson.

W. H. Rolfe, now assistant to the acting superintendent of maintenance on western lines at Edmonton, will be located at Winnipeg as assistant to the general superintendent of maintenance.

The change will result in Winnipeg's being a central point for the company's 80 airplanes now flying from Quebec to the Yukon.

Airlines Set 4-Year Highmark in Safety

The Civil Aeronautics Board reported last month that the 16 domestic passenger airlines had established a safety record of scheduled operations for 1943 unequaled since 1939.

Domestic airlines flew approximately 1,650,000,000 passenger-miles and suffered only two fatal accidents with 23 passenger fatalities. Average: approximately 1.4 passenger fatality for every 100,000,000 passenger-miles flown.

Although passenger fatalities in 1939 averaged approximately 1.2 passengers for every 100,000,000 passenger-miles flown, the Board pointed out that about 900,000,000 more passenger-miles were flown in 1943.

The 1943 record, CAB pointed out, was accomplished with approximately one-half of the lines' prewar flight equipment. Mileage flown increased from approximately 1,100 miles per day per plane in late 1941 to nearly 1,750.

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Airlines Doing Fine Financially Even with Far Less Ships in Air

The Civil Aeronautics Board in its annual report for Nov. 1, 1942, to Oct. 31, 1943, disclosed marked improvement in the financial position of domestic air carriers and increased air carrier operation.

Operating expenses of the air carriers declined about $10,000,000 because of substantially reduced equipment and consequent less total mileage flown while revenues derived entirely from non-mail traffic increased about $7,000,000. Dividends paid aggregated about $2,500,000 or less than 8 per cent of the operating profits during the year. Unappropriated earned surplus more than doubled to $27,000,000, while long-term debt decreased from about 2¼ million dollars to less than ¾ of a million dollars.

Compared with the previous year, payments for the transportation of mail by the Government declined from 0.75 mill per pound-mile to 0.42 mill per pound-mile. Pointing out that the revenues and expenses of the domestic air carriers discussed in the report apply to commercial operations only and not to war contract services, CAB said, "Fees received by the air carriers for their contract services constituted only a small portion of their total profit and that in a few instances even these fees have been returned to the Government."

The Board reported that the airlines are now operating commercially about 55 per cent of the flight equipment in use before requisition by the Army. Airline aircraft are now flown about 1½ times as many miles daily as prior to June 1, 1943, and the load carried per mile increased 40 per cent.

Mail service increased 2½ per cent over prewar volume; express service increased more than 3½ times and the aggregate loads of all traffic carried averaged almost the maximum capacity available per airplane. Even so, much essential traffic of all classes was turned away because of lack of space.

Progress made in the transition from a peacetime to a wartime character of operations enabled the Board to resume considerations of amendments and applications for increased and new air service. At the end of the period covered by the Board's report, the domestic air carriers of the United States, including Catalina with 61 miles and Hawaiian with 356, were authorized to operate over 48,724 route miles, serving 284 cities and towns in passenger service. An additional 81 cities were served on over 1,400 route miles by air mail pickup operations.

The Board noted that it had authorized competing air service between San Francisco and Los Angeles; and that Washington, D. C., was provided with increased air services through authorization of two additional air carriers to serve the nation's capital. The Board said that direct service was also provided between such important cities as New Orleans-Shreveport-Dallas; Denver-Kansas City; San Antonio-Laredo; and Amarillo-Denver. In addition, new air service was provided to northeastern Wisconsin, one of the largest population groups in the United States heretofore lacking in air transportation service. National air service was also materially improved through inclusion of present air stops on additional existing routes.

The Board disclosed that 348 applications, seeking to add nearly 4,000 new cities and towns to the national air transportation system were pending as of October 31, 1943. Since that time 111 additional applications increased the total to 459, the Board said. A public hearing and investigation was also completed involving important questions concerning local, feeder, pick-up air services.

Many of the applications for local air service raised the question of the extent to which the Board may be authorized and warranted under the terms of the Civil Aeronautics Act in permitting surface carriers to engage in air transportation. Of the 348 applications before the Board for domestic air service, up to October 31, 1943, 61 had been filed by surface carriers and an additional 27 since that time.

Internationally, the Board, upon approval of the President, added 1,075 miles to the certificated American Flag air transportation system by issuing a temporary three-year certificate for service between New Orleans, La., and Guatemala City, Guatemala, via Merida, Mex., thus providing a new air transportation gateway between the United States and Central and South America. The Board also, with the President's approval, awarded certificates to 21 Alaskan air carriers, marking the first step in the regulation of air transportation service in that territory.

Informal studies on international air operations are being conducted by the Board, which has invited interested persons to submit suggestions regarding international routes to be operated after the war. The Board also announced that it was proceeding with hearings, the first to be opened up since the beginning of the war, on applications for new airline service between the United States and points in Mexico, the Caribbean area, and Central and South America. The Board said 62 applications seeking new international and overseas air service were pending before it on Oct. 31 last, 28 more having been filed since then.

(TRADE MARK)

British Air Cargo Tonnage in '43 Nearly Doubles Total for 1942

Every day of the year 1943, aircraft of British Overseas Airways Corp. flew the equivalent of one and one-third times round the world. Total mileage was 12,481,485 and represents a 25 per cent increase over the previous year. Cargo ton-miles were up 65.7 per cent, Cargo tonnage up 85.8 per cent.

Detailed figures are as follows:

	January-December 1942	*January-December 1943 (Prov.)*	*Per Cent Of Increase 1942/1943*
Passenger Ton Miles	9,154,409	11,252,868	22.9
Mail Ton Miles	3,318,250	3,094,235	—6.8
Freight Ton Miles	4,760,398	7,886,809	65.7
Total Traffic Ton Miles	17,233,057	22,233,912	29.0
Total Miles Flown	9,967,379	12,481,485	25.2
Total Passengers Carried	49,847	65,667	31.7
Mail Carried (tons)	1,093	1,271	16.3
Freight (tons)	2,139	3,975	85.8

At present, routes operated by BOAC approximate 50,000 miles to assure communications between England and all parts of the British Commonwealth. For security reasons not all of these routes can be made public but the list includes:

United Kingdom-Canada—The North Atlantic Return Ferry operates over the 3,200-mile route between the United Kingdom and Montreal. It was pioneered by BOAC, which took over responsibility for its operation in September 1941. It still is the only service to have run in both directions over the North Atlantic through two winters, and is now running in its third. It carries back to Canada, as required, delivery pilots and crews of the RAF Transport Command, and aircraft return with Government passengers and freight.

United Kingdom-U.S.A.—A flying boat service which is direct in summer but diverts to a winter route which includes Portugal, Bathhurst, Nigeria, Brazil, Trinidad and Bermuda.

United Kingdom-Ireland (Foynes)—Shuttle to connect with Pan American Airways and American Export Airlines trans-Atlantic services.

United Kingdom-Portugal (Lisbon) — A shuttle service.

Additional routes are *United Kingdom-Sweden* and *United Kingdom-Portugal-Gibraltar-North Africa-Egypt.*

From Cairo it is possible today to travel via BOAC to Palestine, Iran, Iraq, Eritrea, Ethiopia, Saudi Arabia, India, the Anglo-Egyptian Sudan, French Equatorial Africa, Belgian Congo, Gold Coast, Uganda, Kenya, Portuguese East Africa and Madagascar.

South Africa-India—The Horseshoe Route, some 9,000 miles, flown regularly by Short Empire flying boats via Portugese East Africa, Tanganyika, Kenya, Uganda, the Sudan, Egypt, Palestine, Iran and Arabia.

South African Service—From Durban, terminus of the Horseshoe Route, to Johannesburg.

British Overseas Airways services are directly controlled by the British Air Ministry and carry only priority loads.

UAL's Cargo Traffic Up

New coast-to-coast cargoliner service was largely responsible for a 62 per cent increase in mail loads carried by United Air Lines in January as compared with the same month last year. In the month, UAL flew 1,190,523 mail ton-miles as against 733,198 in January, 1943. Cargo ton-miles flown by United in January totaled 319,260 as compared with 282,274 in January last year, a gain of 13 per cent.

United inaugurated a new Chicago-San Francisco cargo schedule Jan. 17 to supplement all-cargo service opened last fall.

Pan Am Doubles Its Services to Puerto Rico, And to La Guaira

Passenger, cargo and mail service between Puerto Rico and the U. S. has been increased by Pan American Airways with the inauguration on Feb. 26 of a second daily Miami-San Juan-Miami round-trip schedule. At the same time the previous three-times-a-week service to La Guaira, Venezuela, and Curacao, N.W.I. has been doubled.

The new Puerto Rico service, under which two planes will make the 2,300-mile round trip daily, represents a 40 per cent increase over previously-available space for wartime passengers and cargoes on the "local" services between Miami and San Juan. As a result, the present unprecedented demands for passage and cargo space to and from the strategic Caribbean outpost of Puerto Rico will be largely satisfied.

CAB approval in December of night flying over Pan Am's Miami-San Juan route, first lighted airway in the Caribbean, paved the way for inauguration of round-trip service in one day by Clipper seven days a week, with the 21-passenger Douglas transports completing the final leg of their daily return trips to Miami after dark.

The present step-up service is a second direct result of the approval of night flying. Under the new schedules, a plane leaves Miami at 5 a.m. daily arriving at San Juan at 1:30 p.m. (San Juan time), then commences its return to Miami 30 minutes later. Stops are made at Camaguay, Port au Prince, and Ciudad Trujillo both outbound and inbound. The second daily plane follows by 30 minutes all the way.

These "local" services are in addition to regular flights operating both north and southbound through Puerto Rico, stopping over at San Juan. These through services include daily trips extending to Buenos Aires and a weekly "cargo and mail only" service to Belem, Brazil—first regularly-scheduled commercial all-cargo service between North and South America.

Doubling of service between Miami and La Guaira, Venezuela, also effective Feb. 26 means that that important country as well as Curacao, N.W.I. (to which Pan American service was recently extended) will be afforded six-times-a-week service to and from the U. S.

Canadian Pacific Air Lines in addition to carrying 5,806 passengers during January, an increase of 83 per cent over the corresponding month of 1943, carried 630,500 lbs. of cargo, an increase of 2 per cent.

Combination Rail-Air Cargo Up 28 Per Cent

Combination rail-air express traffic handled for the nation's commercial airlines in 1943 gained 28.3 per cent over '42, the air division of Railway Express Agency reported this month. There were 410,758 shipments handled in the combined service, compared with 319,983 shipments in 1942.

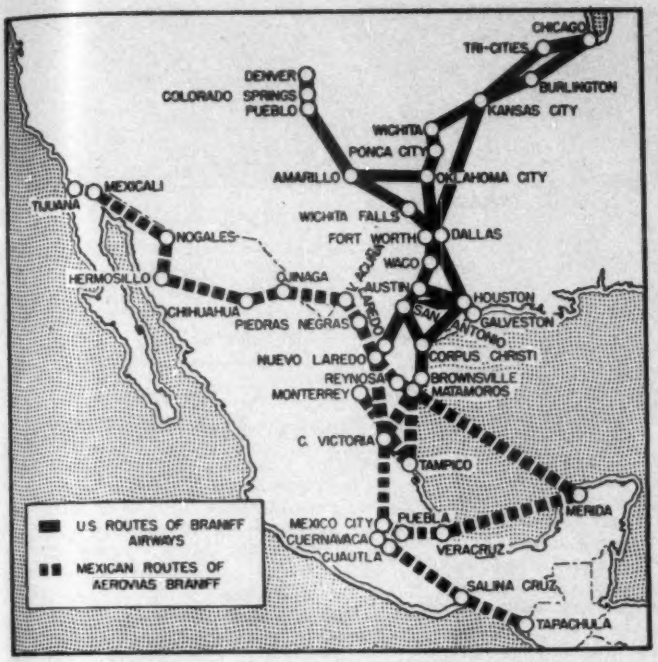
Continued use of the combined rail and air service by shippers at off-airplane points accounted for 41,007 shipments in December, an increase of 24.6 per cent over December 1942.

Coordination of rail and air schedules facilitates the movement of combination rail-air express between the 350 airport cities in the U. S. and Canada, and the 23,000 off-airline offices of REA. About 30 per cent of all air traffic is handled in rail-air service.

AIR COMMERCE NOTES

Spotlighting general increases in hauling vital war cargo, Northwest Airlines carried a total of 143,293 lbs. of cargo between Chicago and the Pacific Northwest during January. The figure represents an increase of nearly 20,000 lbs. over the total for the same month a year ago. In 1943, NWA planes carried a total of 1,554,732 lbs. of cargo. January loads were carried 83,026,397 cargo pound-miles.

A total of 9,652 revenue passengers used Northwest Airlines planes during January, an increase of 5,626 over the same month of 1943. Last year Northwest carried 88,494 revenue passengers. Revenue passenger miles for January totaled 6,739,959 as compared with 2,612, 853 for January, 1943.



Braniff as vice president. Other officers include Antonio Correa, vice president; C. G. Adams, treasurer, and Jess N. Dalton, secretary.

The company will immediately undertake construction of communication systems, survey of airport facilities and personnel and navigational requirements. Service will be inaugurated upon completion of necessary ground installations and acquisition of flight equipment.

★

Braniff-in-Mexico Gains 2,018 Miles of Airlines; Total Now Near 5,000 Miles

Routes of Aerovias Braniff Mexico have been expanded to include 2,018 miles formerly held by Lineas Aereas Nacionales, President T. E. Braniff has announced. Added to the 2,643 miles previously granted Aerovias Braniff by the Mexican Government, the company now holds operating licenses covering 4,661 miles in Mexico.

The new mileage comprises a transcontinental route in Mexico from Tijuana on the Pacific coast to Matamoros on the Gulf coast, serving Mexicali, Nogales, Hermosillo, Chihuahua, Ojinaga, Villa Acuña, Piedras Negras, Nuevo Laredo, and Reunosa. Service will also be provided from Matamoros to Tampico, and from Tampico to Monterrey as a result of the acquisition.

"Coordinated schedules over the routes of Braniff Airways and Aerovias Braniff will provide direct air transportation between principal cities of Mexico and the Central and Southwest U. S.," Braniff said, "subject to the approval of the Civil Aeronautics Board."

José Navarro Elizondo, formerly head of Lineas Areas Nacionales, has joined Aerovias

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Piper Offers New Aid To Airport Planners

One question in postwar flying, and a vital one, is that of sufficient landing facilities. Without inexpensive airports and landing strips, properly distributed and in ample quantity, flying will be definitely restricted. Where, for example, would the automobile be today if it weren't for the great highway system of America?

Realizing, it reports, the importance of landing facilities to postwar pilots and to future development of towns, Piper Aircraft Corp. has prepared a booklet, *What Your Town Needs in the Coming Air Age.*

The booklet forecasts probable effects of the coming air age upon the towns of America, and contains practical examples of how any town can lay plans now for proper peacetime landing facilities "without spending too much at first."

Readers interested may secure a copy by writing Piper Aircraft, at Lock Haven, Pa., or AIR TRANSPORTATION.

South Africans Planning Airport for Johannesburg

A major airport for Johannesburg, Union of South Africa, costing close to $4,000,000 and capable of accommodating large commercial aircraft is being considered, a recent Department of Commerce announcement declares.

Reports show that 85 per cent of the prewar air traffic of the Union originated and ended at Johannesburg.

Aero C. of C. Working On Postwar Port Ideas

Plans for supplying standard information on air field type landing facilities as guides to communities interested in making plans for postwar private flying installations, were discussed at a meeting of the Personal Aircraft Committee of the Aeronautical Chamber of Commerce in Washington Feb. 16. The meeting was in charge of William A. Mara, vice chairman of the committee, who is with the Stimson Division of Consolidated Vultee Aircraft Corp.

A guest of the committee was Reed Chambers, vice president of the U. S. Aviation Insurance Group, who discussed flying insurance problems.

Airex to 350 Cities

Only eighty-five U. S. cities were scheduled airline stops a decade ago. Today more than 350 cities have direct air express service, with supplemental rail-air service available through the 23,000 offices of the Railway Express Agency.

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TO Captain Gill Robb Wilson, one of the country's outstanding aviation experts, who has resigned as president of the National Aeronautic Association to become aviation editor of the New York *Herald Tribune*. He has also resigned as editor of *National Aeronautics*.

Captain Wilson, who has been active in forming nearly every important civilian flying group, is writing two articles a week, to appear Wednesdays and Sundays, beginning March 1.

One of the earliest evangelists of aviation, Captain Wilson has done much to shape national air policies. As president of NAA for four terms, he has increased plane passenger traffic and made flying progressively safer. As state aviation director for New Jersey (1931 to date), he helped to make the state a center for aviation enterprises. The U. S. Civil Air Patrol, world's largest civilian air force, owes its existence to Captain Wilson, who helped organize it, and was its first executive officer.

Captain Wilson was born in Clarion County, Pa., and graduated from Washington and Jefferson College in 1915 to become a Presbyterian minister at Weirton, W. Va. When World War I broke out he enlisted as an ambulance driver attached to the French Army. Later, he became a pilot with the French and was awarded the *Croix de Guerre*. When the U. S. entered the war he transferred to the American Air Corps.

Returning to America, he became a pastor in Trenton, N. J. Some time later he gave up his career as a minister to crusade for aviation, organized the first air cargo transport business in the U. S.

To Paul F. Collins, with Northeast Airlines since 1933, on his elevation to the presidency of his company to succeed S. J. Solomon, now board chairman.

Collins started his career in the air as a lieutenant in the Army's 138th Air Squadron in World War I. After the 1918 Armistice, he became a test pilot, airmail pilot in the early days when mail was flown by the Postoffice Department itself, and eventually operating head of Transcontinental Air Transport (one of the original components of today's TWA) and of Ludington Airways, aggressive operator of the New York-Philadelphia-Washington route in the early 30's.

TO William Littlewood, engineering vice president of American Airlines, who has been appointed chairman of the new Air Transport Engineering Activity Committee of the Society of Automotive Engineers.

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TO David B. Shaughnessy, made traffic manager for American Airlines, at St. Louis. Shaughnessy is in his tenth year with American, and before his appointment to St. Louis, was traffic manager in Louisville.

TO D. Sherman "Doug" Starr, appointed superintendent of stations by Northeast Airlines Inc. In addition to this position he will superintend all matters pertaining to Commissary and Food Service.

Starr most recently was assistant superintendent of traffic for Alaska Airlines and has had wide experience in the field of aviation. In 1942 he worked with the American republics aviation division of Reconstruction Finance Corp., and was based in Manaos, Brazil as operations representative.

TO Gardner Cowles, Jr., president of the Des Moines *Register & Tribune*, on his election as a director of United Air Lines at a special meeting of United's directors in Chicago. He takes the place of Joseph P. Ripley, resigned.

Publisher Cowles began his career as city editor of the *Register* in 1925. In addition to heading the Des Moines newspapers, he is vice president of the Minneapolis *Star Journal & Tribune*, president of *Look* magazine, Iowa Broadcasting Co., the South Dakota Broadcasting Co., and former domestic head of OWI.

Mr. Cowles has long been interested in aviation from both a local and a national viewpoint.

Other directors of United are Martin C. Ansorge, New York attorney; Justin W. Dart, president of the United Drug Company; Paul M. Godehn, Chicago attorney; J. A. Herlihy, vice president-operations of United Air Lines; John J. Mitchell, California rancher; W. A. Patterson, president of United Air Lines; Governor Sumner Sewall of Maine, and Paul G. Hoffman, president of the Studebaker Corporation.

TO William D. Cross, Jr., appointed contracts manager of the Duramold division of Fairchild Engine & Airplane Corp.

William Cross, Jr.

Prior to joining the Duramold staff early this year, Cross was production manager for Aerojet Engineering Corp. in Pasadena and earlier was manager of industrial engineering activities of Lockheed Overseas Corp. in England, Scotland and Ireland. In 1929-30 he was a student at the U. S. Air Corps Flying School in San Antonio, following which he participated in the construction of hangars at Randolph Field, Duncan Field, and Wheeler Field in Hawaii.

He left airdrome construction to become associated with Bishop Trust Co. in Honolulu and represented Doris Duke Cromwell to supervise construction of her Hawaiian home. In 1940 he joined the staff of Douglas Aircraft Co. as a member of the production control department.

TO Harold A. Olsen, named assistant to Pennsylvania-Central Airlines' Vice President J. J. O'Donovan. Olsen is now district traffic manager in Detroit and has been with PCA since May 1941.

TO Philip G. Johnson, president of the Boeing Aircraft Company, on his selection as "Seattle's First Citizen" for 1943, by the Seattle Real Estate Board. He has also been president of United Air Lines and of United Aircraft & Transport Corp. In September 1939, Mr. Johnson returned to his home town, Seattle, where he again took over the presidency of Boeing Aircraft, which he had previously headed in 1926.

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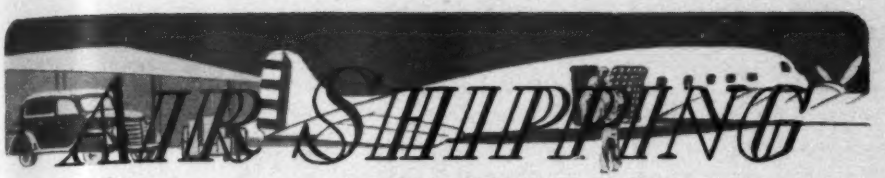

(TRADE MARK)

International Express and Mail Tables

Express rates quoted are from U. S. international airport of departure and are based on the latest prevailing tariffs. Shippers are warned, however, that they are subject to change.

Bb—Bangor, Me.
Bro—Brownsville, Tex.
Bw—Boston, Mass.
Cg—Chicago
Cub—Cut Bank, Mont.
Eo—El Paso
Fv—Fort Worth
Gf—Grand Forks, N. D.
Lgs—Los Angeles
Mia—Miami
No—New Orleans
Nyk—New York
Sq—San Diego
Ste—Seattle

International Air Express is subject to two charges: one a charge per pound weight or measurements at carrier's option (200 cu. in. to the pound of weight), the other a charge per $100 of valuation. The two must be added on any shipment to determine the cost. Neither includes insurance, which may be purchased by the shipper from the carrier or otherwise.

Priorities: The air carriers warn all shippers that express traffic, both U. S. Government and commercial, is so heavy that no guarantee can be given that any shipment will depart on any particular plane unless it enjoys U. S. priority. Otherwise it will depart, in relation to other shipments, in the order received at the international airport used, subject to wartime limitations. Pick-up service without extra charge now is available for all international air express. For shipments forwarded via Pan American Airways, a "Shipper's Letter of Instructions" is prepared and accompanies shipment to local R.E.A. office, where the PAA Airwaybill is prepared. (On cargoes to be shipped via American Export Airlines, Inc., shippers should contact "Shipper's Service," Room 920, 25 Broadway, New York. HAnover 2-9144.)

International air carriers whose schedules and rates are included here are indicated by the letter following the symbol for the airport:

A—American Airlines.
C—Colonial Air Lines.
E—American Export Airlines.
EA—Express Aero Inter-Americano, S. A.
K—KLM-Royal Dutch Air Lines.
NE—Northeast Airlines.
NW—Northwest Airlines, Inc.
P—Pan American Airways System and affiliates.
T—Trans-Canada Air Lines.
U—United Air Lines.
W—Western Air Lines.

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Antofagasta, Chile	Mia P	1.26	.45	M,W,Th,F, Sa	.40
"	No P	1.34	.45	T,Th,F,Sa	.40
"	Bro P	1.34	.45	M,T,W,Th,Sa	.40
"	Lgs P	1.95	.45	M,T,W,F,Su	.40
Aracaju, Brazil	Mia P	1.26	.45	Su	.40
"	No P	1.71	.45	Sa	.40
"	Bro P	1.71	.45	F	.40
"	Lgs P	2.28	.60	Th	.40
Arvia Branca, Brazil	Mia P	1.24	.45	T,W,Sa	.40
"	No P	1.56	.45	M,T,F	.40
"	Bro P	1.56	.45	Su,M,Th	.40
"	Lgs P	2.13	.45	Su,W,Sa	.40
Arequipa, Peru	Mia P	1.23	.45	Dly	.30
"	No P	1.26	.45	M,T,Th,F,Sa	.30
"	Bro P	1.26	.45	Dly	.30
"	Lgs P	1.93	.45	Dly	.30
Arica, Chile	Mia P	1.25	.45	M,W,Th,F,Sa	.40
"	No P	1.26	.45	T,Th,F,Sa	.40
"	Bro P	1.26	.45	M,T,W,Th,Sa	.40
"	Lgs P	1.94	.45	M,T,W,F,Su	.40
Aruba, N. W. I.	— P	via M	arac	aibo, Ven.	...
"	Mia K	.71	.45*	We,Sa	.25
Asuncion, Para	Mia P	1.73	.45	Th,Sa	.40
"	No P	1.86	.45	Tu,F	.40
"	Bro P	1.86	.45	T,Th	.40
"	Lgs P	2.43	.60	M,W	.40
Bahia, Brazil (*See Sao Salvador*)					
Balboa, Canal Zone	Mia P	.76	.35	Dly	.15
"	No P	.90	.35	M,T,Th,F,Sa	.15
"	Bro P	.90	.35	Dly	.15
"	Lgs P	1.45	.45	Dly	.15
Baracoa, Cuba	Mia P	.28	.20	Dly	.10
Barcelona, Venezuela	Mia P	.85	.35	Dly	.25
"	No P	1.17	.45	M,T,Th,F,Sa	.25
"	Bro P	1.17	.45	Dly	.25
"	Lgs P	1.78	.45	Dly	.25
Barranquilla, Columbia	Mia K	.85	.50*	Sa	.35
via Kingston	Mia P	.61	.35	Su,Tu,W,F	.35
via Balboa	Bro P	1.03	.35	Dly	.35
"	No P	1.03	.35	M,T,Th,F,Sa	.35
"	Lgs P	1.59	.35	Dly	.35
Bauru, Brazil	Mia P	1.58	.45	T,Sa	.40
"	No P	1.71	.45	M,F	.40
"	Bro P	1.71	.45	Su,Th	.40
"	Lgs P	2.28	.65	Sa,W	.40
Belem, Brazil (*See Para*)					

Destination	U. S. Gateway & Airline	RATES		Depart	Mail per ½ Oz.
		Per Lb.	Per $100 Value		
Bello-Horisonte, Brazil	Mia P	1.65	.45	T,W, Th,F,Sa Su	.40
"	No P	2.13	.45	M,T,Th,F,Sa	.35
"	Bro P	2.13	.45	M,T,W,Th,F, Su	.40
"	Lgs P	2.09	.60	M,T,W,Th, Sa, Su	.40
Bonaire, N. W. I.	— P	via M	arac	aibo, Ven.	
"	Mia K	.75	.45*	We,Sa	.25
Buenos Aires, Argentina	Mia P	1.56	.45	Dly	.40
"	No P	1.70	.45	M,T,Th,F,Sa	.40
"	Bro P	1.70	.45	Dly	.40
"	Lgs P	2.26	.60	Dly	.40
Cali, Col. via Balboa	Mia P	.89	.35	Dly	.35
"	No P	1.03	.35	M,T,Th,F,Sa	.40
"	Bro P	1.03	.35	Dly	.35
"	Lgs P	1.59	.45	Dly	.35
Camaguey, Cuba	Mia P	.26	.20	Dly	.10
"	Mia K	0.23	.25*	We,Sa	.10
Camocim, Brazil	Mia P	1.22	.45		.40
"	No P	.150	.45		.40
"	Bro P	1.50	.45		.40
"	Lgs P	2.05	.45		.40
Campeche, Mexico	Mia P	.41	.20	Su,W,F	.10
"	No P	.41	.20	M,T,Th,F,Sa	.10
"	Bro P	.51	.35	Dly	.10
"	Lgs P	1.00	.35	Dly	.10
Campo Grande, Brazil	Mia P	1.48	.45	T,Sa	.40
"	No P	1.61	.45	M,F	.40
"	Bro P	1.61	.45	Su,Th	.40
"	Lgs P	2.18	.45	Sa,W	.40
Canavieiras, Brazil	Mia P	1.33	.45	Su,T	.40
"	No P	1.81	.45	M,Sa	.40
"	Bro P	1.81	.45	Su,F	.40
"	Lgs P	2.38	.60	Sa,Th	.40
Caracas, Venezuela (*See La Guaira*)					
Caravellas, Brazil	Mia P	1.36	.45		.40
"	No P	1.85	.45		.40
"	Bro P	1.85	.45		.40
"	Lgs P	2.41	.60		.40
Cayenne, Fr. Guiana	Mia P	1.02	.35	Dly	.30
"	No P	1.26	.45	M,T,Th,F,Sa	.30
"	Bro P	1.26	.45	Dly	.30
"	Lgs P	1.91	.45	Dly	.30
Cayo Mambi, Cuba	Mia P	.26	.20	Dly	.10
Chetumal, Mexico	Mia P	.55	.35	W,F	.10
"	No P	.55	.35	Th,Sa	.10
"	Bro P	.55	.35	Su,Th	.10
"	Lgs P	1.04	.35	W,Sa	.10
Chiclayo, Peru	Mia P	1.11	.45	Dly	.30
"	No P	1.19	.45	M,T,Th,F,Sa	.30
"	Bro P	1.19	.45	Dly	.30
"	Lgs P	1.81	.45	Dly	.30
Cienfuegos, Cuba	Mia P	.20	.17	T,W,Th,F,Su	.10
C. del Carmen, Mexico	Mia P	.45	.20	Su,W,F	.10
"	No P	.45	.20	M,T,Th,F,Sa	.10
"	Bro P	.47	.35	Dly	.10
"	Lgs P	.94	.35	Dly	.10
Ciudad Trujillo, D. R.	Mia P	.45	.20	Dly	.10
"	Mia K	1.12	.50*	Sa	.10
Cochabamba, Bolivia	Mia P	1.26	.45	W,Sa	.35
"	No P	1.35	.45	Tu,F	.35
"	Bro P	1.35	.45	MTh	.35
"	Lgs P	1.95	.45	Su,W	.35
Concepcion, Bolivia	Mia P	1.31	.45	Sa	.35
"	No P	1.45	.45	F	.35
"	Bro P	1.45	.45	Th	.35
"	Lgs P	2.03	.45	W	.35
Cordoba, Argentina	Mia P	.149	.45	Dly	.40
"	No P	1.63	.45	M,T,Th,F,Sa	.40
"	Bro P	1.63	.45	Dly	.40
"	Lgs P	2.19	.45	Dly	.40
Coro, Venezuela	Mia P	.74	.35	M,T,W,F,Su	.25
"	No P	1.11	.45	M,T,Th,F,Sa	.25
"	Bro P	1.11	.45	Dly	.25
"	Lgs P	1.69	.45	Dly	.25
Corumba, Brazil	Mia P	1.41	.45	T,Sa	.40
"	No P	1.56	.45	M,F	.40
"	Bro P	1.56	.45	Su,Th	.40
"	Lgs P	2.13	.45	Sa,W	.40

Destination	U. S. Gateway & Airline	RATES		Depart	Mail per ½ Oz.
		Per Lb.	Per $100 Value		
Cristobal, Canal Zone	Mia P	.76	.35	Dly	.15
"	No P	.92	.35	M,T,Th,F,Sa	.15
"	Bro P	.92	.35	Dly	.15
"	Lgs P	1.46	.45	Dly	.15
Cuenca, Ecuador	Mia P	1.06	.35	Su,W,F	.30
"	No P	1.15	.45	T,Th,Sa	.30
"	Bro P	1.15	.45	M,W,F	.30
"	Lgs P	1.76	.45	Su,T,Th	.30
Curacao, N. W. I.	— P	via M	arac	aibo, Ven.	
"	Mia K	0.73	.45*	W,Sa.	.25
Curityba, Brazil	Mia P	1.60	.45	Su,W,Th,F	.40
"	No P	2.00	.45	T,Th,Sa	.40
"	Bro P	2.00	.45	M,T,W,F	.40
"	Lgs P	2.58	.60	Su,M,T,Th	.40
David, Panama	Mia P	.82	.35	Dly	.15
"	No P	.85	.35	M,T,Th,F,Sa	.15
"	Bro P	.85	.35	Dly	.15
"	Lgs P	1.38	.45	Dly	.15
Esmeraldas, Ecuador	Mia P	.99	.35	Su	.30
"	No P	1.11	.45	Sa	.30
"	Bro P	1.11	.45	F	.30
"	Lgs P	1.71	.45	Th	.30
Florianopolis, Brazil	Mia P	1.63	.45	Su,W,F	.40
"	No P	2.11	.45	T,Th,Sa	.40
"	Bro P	2.11	.45	M,W,F	.40
"	Lgs P	2.68	.60	Su,T,Th	.40
Fort de France, Martinique	Mia P	.71	.35	Su	.15
"	No P	1.00	.35	M	.15
"	Bro P	1.16	.45	Sa	.15
"	Lgs P	1.78	.45	F	.15
Fortaleza, Brazil (Ceara)	Mia P	1.23	.45	M,T,W,Th, Sa,Su	.40
"	No P	1.54	.45	M,T,F,Sa	.40
"	Bro P	1.54	.45	Su,M,T,Th, F,Sa	.40
"	Lgs P	2.10	.45	M W,Th,F, Sa,Su	.40
Georgetown, British Guiana	Mia P	.90	.45	Dly	.30
"	No P	1.24	.45	Dly	.30
"	Bro P	1.24	.45	M,T,Th,F,Sa	.30
"	Lgs P	1.88	.45	Dly	.30
Guadalajara, Mexico	Bro P	.43	.20	Dly	.10
"	Lgs P	.59	.35	Dly	.10
Guantanamo, Cuba	Mia P	.28	.20	Dly	.10
Guatemala City, Gua	Mia P	.74	.35	Dly	.10
"	No P	.53	.35	Dly	.13
"	Bro P	.53	.35	M,T,Th,F,Sa	.13
"	Lgs P	1.08	.45	Dly	.13
Guayaquil, Ecuador	Mia P	1.04	.35	Dly	.30
"	No P	1.15	.45	Dly	.30
"	Bro P	1.15	.45	M,T,Th,F,Sa	.30
"	Lgs P	1.75	.45	Dly	.30
Havana, Cuba	Mia P	.20	.17	Dly	.10
"	MiaEA	.20	.18	Twice Dly	.10
Hermosillo, Mexico	Bro P	.77	.40	Dly	.10
"	Lgs P	.24	.17	Dly	.10
Iguassu Falls, Brazil	Mia P	1.69	.45	Dly	.40
"	No P	1.91	.45	Th	.40
"	Bro P	1.91	.45	T	.40
"	Lgs P	2.48	.60	T	.40
Ixtepec, Mexico	Mia P	.76	.35	M	.10
"	No P	.76	.35	M,W,F	.10
"	Bro P	.41	.20	M,T,Th,F,Sa	.10
"	Lgs P	.89	.35	Su,M,T,W, Th,F	.10
				Su,M,T,W, Th,Sa	.10
Joao Pessoa, Brazil (Cabedello)	Mia P	1.25	.45		.40
"	No P	1.64	.45		.40
"	Bro P	1.64	.45		.40
"	Lgs P	2.20	.45		.40
Kingston, Jamaica	Mia P	.39	.25	T,W,Th,F,Su	.10
"	Mia K	.35	.35*	W	.10
La Guaira, Venezuela	Mia P	.81	.35	M,W,F,Sa	.25
"	Mia K	.75	.45*	W,Sa	.25
"	No P	1.15	.45	M,T,Th,F,Sa	.25
"	Bro P	1.15	.45	Dly	.25
"	Lgs P	1.75	.45	Dly	.25

Destination	U. S. Gateway & Airline	RATES		Depart	Mail per ½ Oz.
		Per Lb.	Per $100 Value		
La Paz, Bolivia	Mia P	1.25	.45	Su,Tu,W,Sa	.35
"	No P	1.30	.45	M,T,F,Sa	.35
"	Bro P	1.30	.45	Su,M,Th,F	.35
"	Lgs P	1.95	.45	Su,W,Th,F	.35
Lima, Peru	Mia P	1.18	.45	Dly	.30
"	No P	1.24	.45	M,T,Th,F,Sa	.30
"	Bro P	1.24	.45	Dly	.30
"	Lgs P	1.88	.45	Dly	.30
Loja, Ecuador	Mia P	1.08	.45	Su,W,F	.30
"	No P	1.17	.45	T,Th,Sa	.30
"	Bro P	1.17	.45	M,W,F	.30
"	Lgs P	1.78	.45	Su,T,Th	.30
Maceio, Brazil	Mia P	1.26	.45	Su,M,T,Th,Sa	.40
"	No P	1.68	.45	M,T,F,Sa	.40
"	Bro P	1.68	.45	T,Th,F,Sa,Su	.40
"	Lgs P	2.24	.45	M,W,Th,F,Sa	.40
Managua, Nicaragua	Mia P	.86	.35	Dly	.12
"	No P	.71	.35	M,T,Th,F,Sa	.12
"	Bro P	.71	.35	Dly	.12
"	Lgs P	1.22	.45	Dly	.12
Manaos, Brazil	Mia P	1.24	.45	T,Sa	.40
"	No P	1.56	.45	M,F	.40
"	Bro P	1.56	.45	Su,Th	.40
"	Lgs P	2.13	.45	W,Sa	.40
Manta, Ecuador	Mia P	1.03	.35	Th,Sa	.30
"	No P	1.14	.45	T,F	.30
"	Bro P	1.14	.45	T,Th	.30
"	Lgs P	1.74	.45	M,W	.30
Manzanillo, Cuba	Mia P	.26	.20	Dly	.10
Maracaibo, Venezuela	Mia P	.69	.35	M,T,W,F,Su	.25
"	Mia K	.75	.45*	W,Sa	.25
"	No P	1.08	.45	M,T,Th,F,Sa	.25
"	Bro P	1.08	.45	Dly	.25
"	Lgs P	1.66	.45	Dly	.25
Maturin, Venezuela	Mia P	.89	.35	Dly	.25
"	No P	1.19	.45	M,T,Th,F,Sa	.25
"	Bro P	1.19	.45	Dly	.25
"	Lgs P	1.80	.45	Dly	.25
Mazatlan, Mexico	Bro P	.57	.35	Dly	.10
"	Lgs P	.45	.20	Dly	.10
Medellin, Colombia (via Barranquila)	Mia P	1.06	.35	Su,T,W,F	.35
Medellin, Colombia (via Balboa)	Mia P	1.06	.35	Sa	.35
	No P	1.10	.45	T,F,Sa	.35
	Bro P	1.10	.45	M,Th,F	.35
	Lgs P	1.65	.45	Su,W,Th	.35
Mendoza, Argentina	Mia P	1.41	.45	M,W,Th,Sa	.40
"	No P	1.55	.45	T,F,Sa	.40
"	Bro P	1.55	.45	M,T,Th,Sa	.40
"	Lgs P	2.11	.45	M,W,F,Su	.40
Merida, Mexico	Mia P	.37	.20	Su,W,F	.10
"	No P	.37	.20	M,T,Th,F,Sa	.10
"	Bro P	.55	.35	Dly	.10
"	Lgs P	1.04	.35	Dly	.10
Mexicali, Mexico	Lgs P	.20	.17	Dly	.10
Mexico City, Mexico	Mia P	.64	.35	Su,W,F	.10
"	No P	.64	.35	M,T,Th,F,Sa	.10
"	Bro P	.26	.20	Dly	.10
"	Lgs A	.67	.35	Dly	.10
"	Lgs P	.70	.20	Dly	.10
Mexico City, Mexico	Fv A	.40	.20	Dly	.10
"	Eo A	.42	.20	Dly	.10
"	Sq A	.74	.20	Dly	.10
Minatitlan, Mexico	Mia P	.53	.35	Su,W,F	.10
"	No P	.53	.35	M,T,Th,F,Sa	.10
"	Bro P	.39	.20	Dly	.10
"	Lgs P	.86	.35	Dly	.10
Monterrey, Mexico	Fv A	.33	.20	Dly	.10
"	Eo A	.34	.20	Dly	.10
"	Lgs A	.62	.20	Dly	.10
"	Sq A	.74	.20	Dly	.10
Montevideo, Uruguay‡					
Nassau, Bahamas	Mia P	.20	.17	Dly ex Su,W	.10
Natal, Brazil	Mia P	1.25	.45	M,T,W,Th,Sa	.40
"	No P	1.61	.45	M,T,F,Sa	.40
"	Bro P	1.61	.45	Su,M,T,Th,Sa	.40
"	Lgs P	2.18	.45	Su,M,W,F,Sa	.40
Oaxaca, Mexico	Mia P	.73	.35	M,W,F	.10
"	No P	.73	.35	T,Th,Sa	.40
"	Bro P	.35	.20	Su,T,Th	.10
"	Lgs P	.81	.35	M,W,Sa	.10

Destination	U. S. Gateway & Airline	RATES		Depart	Mail per ½ Oz.
		Per Lb.	Per $100 Value		
Oruro, Bolivia	Mia P	1.26	.45	Su,T,W,Sa	.35
"	No P	1.33	.45	M,T,F,Sa	.35
"	Bro P	1.33	.45	Su,M,Th,F	.35
"	Lgs P	1.95	.45	Su,W,Th,Sa	.35
Panama City, Panama	*(See Balboa, C.Z.)*				
Para (Belem), Brazil	Mia P	1.13	.45	Dly	.40
"	No P	1.34	.45	M,T,Th,F,Sa	.40
"	Bro P	1.34	.45	Dly	.40
"	Lgs P	1.95	.45	Dly	.40
Paramaribo, Sur	Mia P	.97	.35	Dly	.30
"	Mia K	1.21	.60*	Sa	.30
"	No P	1.25	.45	M,T,Th,F,Sa	.30
"	Bro P	1.25	.40	Dly	.30
"	Lgs P	1.90	.45	Dly	.30
Parnahyba, Brazil	Mia P	1.21	.45	.....	.40
"	No P	1.48	.45	.....	.40
"	Bro P	1.48	.45	.....	.40
"	Lgs P	2.04	.45	.....	.40
Point a Pitre, Guadeloupe	Mia P	.66	.35	Su	.15
"	No P	.98	.35	M	.15
"	Bro P	1.14	.45	Su	.15
"	Lgs P	1.74	.45	Sa	.15
Port au Prince, Haiti	Mia P	.37	.20	Dly	.10
"	Mia K	.39	.35*	Sa	.10
Port of Spain, Trinidad	Mia P	.79	.35	Dly	.15
"	Mia K	1.00	.55*	W,Sa	.15
"	No P	1.20	.45	M,T,Th,F,Sa	.15
"	Bro P	1.20	.45	Dly	.15
"	Lgs P	1.81	.45	Dly	.15
Porto Alegre, Brazil	Mia P	1.70	.45	T,W,Th,F Sa,Su	.40
"	No P	2.19	.45	M,T,Th,F,Sa	.40
"	Bro P	2.19	.45	M,T,W,Th, F,Su	.40
"	Lgs P	2.75	.60	M,T,W,Th, Sa,Su	.40
Preston, Cuba	Mia P	.24	.17	Dly	.10
Puerto Suarez, Bolivia	Mia P	1.41	.45	Sa	.35
"	No P	1.56	.45	F	.35
"	Bro P	1.56	.45	Th	.35
"	Lgs P	2.13	.45	W	.35
Quito, Ecuador	Mia P	.97	.35	Dly	.30
"	No P	1.09	.45	M,T,Th,F,Sa	.30
"	Bro P	1.09	.45	Dly	.40
"	Lgs P	1.68	.45	Dly	.30
Recife (Pernambuco), Brazil	Mia P	1.26	.45	Su,M,T,W, Th,Sa	.40
"	No P	1.65	.45	M,T,F,Sa	.40
"	Bro P	1.65	.45	Su,M,T,Th, F,Sa	.40
"	Lgs P	2.21	.45	Su,M,W,Th, F,Sa	.40
Rio de Janeiro	Mia P	1.50	.45	Su,T,W,Th, F,Sa	.40
"	No P	1.98	.45	M,T,Th,F,Sa	.40
"	Bro P	1.98	.45	M,T,W,Th, F,Su	.40
"	Lgs P	2.54	.60	Su,M,T,W, Th,Sa	.40
Robore, Bolivia	Mia P	1.38	.45	Sa	.35
"	No P	1.51	.45	F	.35
"	Bro P	1.51	.45	Th	.35
"	Lgs P	2.08	.45	W	.35
Salinas, Ecuador	Mia P	1.05	.35	Th,Sa	.30
"	No P	1.15	.45	T,F	.30
"	Bro P	1.15	.45	T,Th	.30
"	Lgs P	1.75	.45	M,W	.30
Salta, Argentina	Mia P	1.30	.45	Su,T,F	.40
"	No P	1.45	.45	M,Th,Sa	.40
"	Bro P	1.45	.45	Su,W,F	.40
"	Lgs P	2.03	.45	T,Th,Sa	.40

* These rates are only due if consignments are shipped with declared value.

‡ Shipments for Montevideo must be assessed rates to Buenos Aires plus 55c per 2 lbs. or fraction thereof (min. 55c) for forwarding by other carrier to Montevideo, plus $1.10 per shipment transfer charge at Buenos Aires.

Destination	U. S. Gateway & Airline	RATES Per Lb.	RATES Per $100 Value	Depart	Mail per ½ Oz.
San Ignacio, Bolivia	Mia P	1.33	.45	Sa	.35
"	No P	1.48	.45	F	.35
"	Bro P	1.48	.45	Th	.35
"	Lgs P	2.04	.45	W	.35
San Jose, Bolivia	Mia P	1.35	.45	Sa	.35
"	No P	1.50	.45	F	.35
"	Bro P	1.50	.45	Th	.35
"	Lgs P	2.08	.45	W	.35
San Jose, Costa Rica	Mia P	.89	.35	Dly	.15
"	No P	.76	.35	M,T,Th,F,Sa	.15
"	Bro P	.76	.35	Dly	.15
"	Lgs P	1.31	.45	Dly	.15
San Juan, Puerto Rico	Mia P	.53	.35	Dly	.10
San Salvador, El Salvador	Mia P	.79	.35	Dly	.12
"	No P	.61	.35	M,T,Th,F,Sa	.12
"	Bro P	.61	.35	Dly	.12
"	Lgs P	1.14	.45	Dly	.12
Santa Cruz, Bolivia	Mia P	1.28	.45	W,Sa	.35
"	No P	1.43	.45	T,F	.35
"	Bro P	1.43	.45	M,Th	.35
"	Lgs P	1.99	.45	Su,W	.35
Santiago, Chile	Mia P	1.38	.45	M,W,Th,Sa	.40
"	No P	1.51	.45	T,F,Sa	.40
"	Bro P	1.51	.45	M,T,Th,Sa	.40
"	Lgs P	2.08	.45	Su,M,W,F	.40
Santiago, Cuba	Mia P	.26	.20	Dly	.10
Sao Luiz, Brazil	Mia P	1.19	.45	M,T,Th,Sa	.40
"	No P	1.43	.45	M,T,F,Sa	.40
"	Bro P	1.43	.45	Su,T,Th,Sa	.40
"	Lgs P	1.99	.45	M,W,F,Sa	.40
Sao Paulo, Brazil	Mia P	1.55	.45	Su,T,W,Th, F,Sa	.40
"	No P	2.04	.45	M,T,Th,F,Sa	.40
"	Bro P	2.04	.45	M,T,W,Th, F,Su	.40
"	Lgs P	2.60	.60	Su,M,T,W, Th,Sa	.40
Sao Salvador, Brazil (Bahia)	Mia P	1.28	.45	Su,M,T,W, Th,Sa	.40
"	No P	1.76	.45	Su,M,T,Th, F,Sa	.40
"	Bro P	1.76	.45	Su,M,T,Th, F,Sa	.40
"	Lgs P	2.33	.60	Su,M,W,Th, F,Sa	.40
St. Johns, Antigua British West Indies	Mia P	.64	.35	Su	.15
"	No P	.96	.35	M	.15
"	Bro P	1.13	.45	Su	.15
"	Lgs P	1.73	.45	Sa	.15
St. Thomas, V. I.	Mia P	.57	.35	Su	.10
"	No P	.90	.35	M	.10
"	Bro P	1.10	.45	Su	.10
"	Lgs P	1.68	.45	Sa	.10
Talara, Peru	Mia P	1.08	.45	Dly	.30
"	No P	1.17	.45	M,T,Th,F,Sa	.30
"	Bro P	1.17	.45	Dly	.30
"	Lgs P	1.79	.45	Dly	.30
Tampico, Mexico	Bro P	.20	.17	Dly	.10
"	Lgs P	.81	.35	Dly	.10
Tapachula, Mexico	Mia P	.74	.35	M,W,F	.10
"	No P	.74	.35	M,T,Th,F,Sa	.10
"	Bro P	.53	.35	Dly	.10
"	Lgs P	1.02	.35	Dly	.10
Tegucigalpa, Honduras	Mia P	.82	.35	Dly	.12
"	No P	.68	.35	M,T,Th,F,Sa	.12
"	Bro P	.68	.35	Dly	.12
"	Lgs P	1.18	.45	Dly	.12
Tres Lagoas, Brazil	Mia P	1.53	.45	T,Sa	.40
"	No P	1.66	.45	M,F	.40
"	Bro P	1.66	.45	Su,Th	.40
"	Lgs P	2.23	.45	Sa,W	.40
Tucuman, Argentina	Mia P	1.34	.45	Su,T,F	.40
"	No P	1.49	.45	M,Th,Sa	.40
"	Bro P	1.49	.45	Su,W,F	.40
"	Lgs P	2.05	.45	T,Th,Sa	.40
Turbo, Colombia (via Barranquilla)	Mia P	1.06	.35	Su,T,W,F	.35
Turbo, Colombia (via Balboa, C. Z.)	Mia P	1.06	.35	Sa	.35
"	No P	1.10	.45	T,F,Sa	.35
"	Bro P	1.10	.45	M,Th,F	.35
"	Lgs P	1.65	.45	Su,W,Th	.35
Tuxpan, Mexico	Bro P	.20	.17	Dly	.10
"	Lgs P	.83	.35	Dly	.10
Tuxtla,Gutierrez,Mexico	Mia P	.81	.35	M,W,F	.10
"	No P	.81	.45	T,Th,Sa	.10
"	Bro P	.45	.20	Su,T,Th	.10
"	Lgs P	.93	.35	M,W,Sa	.10
Uyuni, Bolivia	Mia P	1.26	.45	Su,T	.35
"	No P	1.38	.45	M,Sa	.35
"	Bro P	1.38	.45	Su,F	.35
"	Lgs P	1.95	.45	Th,Sa	.35
Veracrus, Mexico	Mia P	.57	.35	Su,W,F	.10
"	No P	.57	.35	Su,W	.10
"	Bro P	.33	.20	Dly	.10
"	Lgs P	.79	.35	Dly	.10
Victoria, Brazil	Mia P	1.41	.45	Su,T	.40
"	No P	1.90	.45	M,Sa	.40
"	Bro P	1.90	.45	Su,F	.40
"	Lgs P	2.46	.60	Th,Sa	.40
Villahermosa, Mexico	Mia P	.49	.35	Su,W,F,	.10
"	No P	.49	.35	M,T,Th,F,Sa	.10
"	Bro P	.43	.20	Dly	.10
"	Lgs P	.90	.35	Dly	.10

ATLANTIC LINES

Botwood, Newfoundland	Nyk P	.81	.40	Twice wk	.35
England via Foynes*	Nyk E	(Rates	on	Application)	.30
" "	Nyk P	(Rates	on	Application)	.30
Foynes, Eire via Botwood	Nyk P	1.78	.50	Twice wk	.30
" " via Lisbon	Nyk P	2.00	.50	Fortnightly	.30
"	Nyk E	2.00	.50	.....	.30
Hamilton, Bermuda	Nyk P	.55	.25	Twice wk	.10
Horta, Azores	Nyk P	1.70	.40	Weekly	.30
Lisbon, Portugal	Nyk P	2.00	.50	Weekly	.30
Scotland via Foynes*	Nyk E	(Rates	on	Application)	.30
" "	Nyk P	(Rates	on	Application)	.30
Shediac, N. B	Nyk P	.51	.25	Twice wk	.06
Wales via Foynes*	Nyk E	(Rates	on	Application)	.30
" "	Nyk P	(Rates	on	Application)	.30

CANADIAN LINES

		Note			
Calgary, Alb.	Nyk T	1.02	†	Dly	.06
Edmonton, Alb.	Nyk T	1.06	†	Dly	.06
Halifax, N. S.	Nyk T	.31	†	Dly	.06
Lethbridge, Alb.	Nyk T	.88	†	Dly	.06
" "	CubW	.04	†	Dly	.06
London, Ont.	Nyk T	.22	†	Dly	.06
Moncton, N. B.	BbNE	.05	†	Dly	.06
Montreal, Que.	Nyk C	.12	†	Dly	.06
" "	Nyk T	.12	†	Dly	.06
North Bay, Ont.	Nyk T	.27	†	Dly	.06
Ottawa, Ont.	Nyk T	.18	†	Dly	.06
Regina, Sask.	Nyk T	.80	†	Dly	.06
St. John, N. B.	Nyk T	.31	†	Dly	.06
St. Johns, N. F.	Nyk T	.58	†	Dly	.06
Sydney, N. S.	Nyk T	.36	†	Dly	.06
Toronto, Ont.	Nyk A	.16	†	Dly	.06
"	Nyk T	.16	†	Dly	.06
Vancouver, B. C.	Sta U	.04	†	Dly	.06
"	Nyk T	.96	†	Dly	.06
Windsor, Ont.	Nyk A	.20	†	Dly	.06
"	Cg A	.12	†	Dly	.06
"	Nyk T	.20	†	Dly	.06
Winnipeg, Man.	GfNW	.04	†	Dly	.06
"	Nyk T	60	†	Dly	.06

* British Overseas Airways Corp. carries from Foynes, Ireland to destinations in England, Scotland, and Wales.

† Canadian air express is carried on the same basis as air express within the U. S.: $50 declared value free; excess charged at 10 cents per $100 or fraction thereof.

NOTE: The per pound rate shown in this column is based on the average package weighing 25 lbs., i.e.: A 1 lb. package from New York to Ontario would cost $1—25 lbs. $4. Average cost per pound: 16 cents.

SERVICES FOR THE AIR SHIPPER

Air Cargo Insurance Brokers

Parker & Co. (*see adv't*), 60 E. 42nd St., New York 17, N. Y.; 1616 Walnut St., Philadelphia, Penna.

Riker & Lynch Inc. (*see adv't*), 90 John St., New York, N. Y.; Dominion Square Bldg., Montreal, Canada.

Air Cargo Insurance Underwriters

Marine Office of America, 116 John Street, New York, N. Y.

Wm. H. McGee & Co., Inc. (*see adv't*), 111 John St., New York, N. Y.

Air Express

Railway Express, Air Express Division (*see adv't*), 230 Park Ave., New York 17, N. Y.

Acme Overseas Express, division of Acme Fast Freight, Inc. (*see adv't*), 88 Lexington Avenue, New York 16, N. Y.

Airlines—International

American Airlines (*see adv't*), 100 East 42nd St., New York 17, N. Y.

American Export Airlines, 25 Broadway, New York 4, N. Y.

Expreso Aero Inter-Americano S. A. (*see adv't*), 33 N.W., First Ave., Miami, Fla.

British West Indian Airways (BWIA), 630 5th Ave., New York, N. Y.

Compania Nacional Cubana de Aviacion S. A. Prado, 252, altos, Havana, Cuba.

KLM Royal Dutch Air Lines (*see adv't*), 521 Fifth Ave., New York 17, N. Y.

Pan American Airways System (*see adv't*), Chrysler Bldg., New York, N. Y.

Pan American-Grace Airways (*see adv't*), 135 E. 42nd St., New York, N. Y.

Trans-Canada Air Lines, 673 Fifth Ave., New York, N. Y.

Transportes Aereos Centro - Americanos (TACA), 630 5th Ave., New York.

Airlines—Domestic

All American Aviation Inc., 200 W. 9th St., Wilmington, Del.

American Airlines (*see adv't*), 100 E. 42nd St., New York 17, N. Y.

Braniff Airways Inc., Dallas, Texas.

Chicago & Southern Airlines, Municipal Airport, Memphis, Tenn.

Colonel Airlines Inc. (*see adv't*), 630 Fifth Avenue, New York, N. Y.

Continental Air Lines, Denver, Colo.

Delta Air Corp., Atlanta, Ga.

Eastern Air Lines Inc., 10 Rockefeller Plaza, New York, N. Y.

Inland Air Lines, Inc., Casper, Wyo.

Mid-Continent Airlines, Kansas City, Mo.

National Airlines Inc., Municipal Airport, Jacksonville, Fla.

Northeast Airlines Inc., Commonwealth Airport, East Boston, Mass.

Northwest Airlines Inc., 1885 University Ave., St. Paul, Minn.

Pennsylvania-Central Airlines Corp., National Airport, Washington, D. C.

Transcontinental & Western Air Inc., 101 W. 11th St., Kansas City, Mo.

United Air Lines Transport Corp., 5959 S. Cicero Ave., Chicago.

Western Airlines, Inc., Burbank, Calif.

Air Shipping

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Custom House Brokers

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Air Express International Agency Inc. (*see adv't*), 40 Exchange Pl., New York, N. Y.; 410 N.E. 2nd Ave., Miami, Fla.; Canal Bldg., New Orleans.

Railway Express Agency (*see adv't*), 230 Park Ave., New York 17, N. Y.

Foreign Freight Forwarders

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Railway Express Agency (*see adv't*), 230 Park Ave., New York, 17, N. Y.

International Shipping Agents

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Dade Brothers, Inc. (*see adv't*), Mineola, New York.

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